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TREATMENT OF ACUTE ABDOMINAL CASES IN  
CHILDREN.\*

By P. LOCKHART MUMMERY, F.R.C.S.,

*Surgeon, Queen's Hospital for Children; St. Mark's Hospital, etc.*

THERE is always particular interest attaching to the treatment of acute disease, and the most interesting cases are those in which the doctor has to fight for the patient's life through an acute condition. Probably few cases are more interesting or require more skill and attention than the acute abdominal conditions met with in children. Children are always specially interesting patients, because they show us a clinical picture of the disease uncomplicated by mental or psychical phenomena. Children do not suffer from nerves and are not in the habit of exaggerating their symptoms, or misleading one by their descriptions of them. Further, most children are quite unable to describe what they feel, and one has to go entirely by the actual physical signs and symptoms which are present. Children differ from adults also in being either very much better or very much worse. One seldom sees a child suffering from a serious disease who remains long in an intermediate condition.

\* A post-graduate lecture given at the Queen's Hospital for Children, November the 22nd, 1912.

Children are always very bad or very well, and the transition from one state to the other is so rapid that it often surprises us when we see it. Children react wonderfully to treatment, and, on the other hand, they die terribly quickly if our treatment is wrong or unsuccessful.

The diagnosis is often a matter of great difficulty, and temporising is always impossible. Everything depends upon early recognition and early treatment of the condition, and it is not possible to "wait and see." If one had to state the cardinal fact with regard to acute abdominal conditions in children in the form of an epigram one might say that "prompt treatment is the essence of success." In reality this is the most important point of all, whenever we are dealing with acute abdominal conditions both in children and in adults; but in children the necessity for prompt treatment is much greater than in the case of their elders.

Nearly all the acute abdominal conditions met with in adults may also be found in children. Many of them, however, are extremely rare. I have seen such conditions in children as double pyosalpinx and strangulation of the small intestine by a band. Such conditions, however, may be looked upon as surgical curiosities and are hardly to be anticipated.

The common acute abdominal conditions in children are—first intussusception, secondly acute appendicitis, and thirdly some form of acute obstruction.

#### (1) INTUSSUSCEPTION.

This curious condition almost invariably attacks a perfectly healthy, well-nourished child, often without there being at the time any apparent cause. I do not remember ever to have seen a wasted, poorly nourished baby with intussusception. The children in whom one sees it are nearly always the pride of the family, and have never had a day's illness in their lives before. I believe the commonest cause of the condition to be the swallowing by the child of some hard material which it is unable to digest, and which becomes stuck at the ileo-cæcal valve, thereby starting an invagination of this portion of the gut into the cæcum below. It is rather significant that, according to Mr. Fitzwilliams' figures,\* worked out for 453 cases, the greatest incidence of cases of intussusception occurred just after the public Bank Holidays at Easter and Christmas. Not infrequently the child's parents attribute the onset of the

\* 'Lancet,' 1908, ii, pp. 628 and 709.



condition to some fall. This, however, is so common an ætiological factor in all children that I think we need not attach any importance to it. Most children tumble down in some way or other several times a day, and as soon as they become ill the last tumble is immediately made responsible by parents who are invariably in search of a cause.

The child is usually seized quite unexpectedly with sudden violent pain in the abdomen. It begins to cry and will not be comforted. It refuses food, it may be sick, and in a very short time there is a small action of the bowels usually containing some red, jelly-like material. Not infrequently the first action is more or less normal; generally, however, this is followed by the typical apple-jelly stool of intussusception. Although this may be very small in quantity it is quite characteristic of the condition. An examination of the abdomen will nearly always reveal a swelling, usually sausage-shaped, in some part of the abdomen, the most common situation being transversely just above the navel. This swelling is obviously always present, but it is by no means always felt. It can usually be detected under an anæsthetic, but a good deal will depend upon whether the child is very fat. When it is felt the diagnosis is absolutely clear. The association, however, of the sudden onset of abdominal pain with apple-jelly stools is quite sufficient for diagnosis, as also would be the presence of an abdominal tumour with the onset of acute abdominal pain without the characteristic stools.

Everyone will now agree that the only possible way to deal with a case of intussusception is to reduce the intussusception at the earliest possible moment. In the past there has been considerable discussion as to whether the reduction should be attempted by inflation of the bowel with air or water. While there can be no doubt at all that some cases of intussusception can be reduced by this method, I think all surgeons are now agreed that it is not one which it is advisable to adopt. In the first place, the treatment by inflation causes a considerable amount of shock, and one is never quite certain that the intussusception has been reduced. Secondly, should this treatment fail the child is in a far worse condition for operation than it would have been had this method not been attempted. On the other hand, if the child is operated on at once the result is almost certain to be successful. The operation is a simple one and can be very rapidly performed. When, however, the condition has lasted for more than twenty-four hours the result is always a matter of doubt. If the intussusception is found to be

reducible at the operation the child will probably recover; when, however, it is irreducible, in the vast majority of cases the children die. It is true that there are now a number of recorded cases of children who have survived after an irreducible intussusception has been resected; but, unfortunately, such cases form a very small proportion of the cases of irreducible intussusception met with. Sometimes an intussusception will become irreducible within twenty-four to thirty-six hours after the onset of symptoms; while, on the other hand, I have several times operated upon cases where the symptoms had existed as much as three or four days, and yet have been able to reduce the intussusception. So that an operation is nearly always worth attempting, especially as the outlook otherwise is practically hopeless.

Everything in these cases depends upon early operation and upon gentle handling of the parts. These babies with acute obstruction will not stand a long operation, although they stand a short one exceedingly well. It is quite remarkable to see the amazing rapidity with which they recover. I have frequently been called to come down to the hospital late at night to see a baby some two or three years old, and have found the child in fearful distress, half unconscious, with rapid running pulse, and all the symptoms of impending death. An anæsthetic has been administered, an incision made in the abdomen, the intussusception rapidly reduced, the wound sewn up, and the child sent back to bed. I have gone down the next day, and on entering the ward have found the child, who was so ill the night before, sitting up in bed, smiling and looking as if nothing on earth was the matter with it.

It is important to remember that babies will not stand starvation, even for a short period. My practice is always to give them nourishment as soon as they can swallow. Frequently a baby with intussusception has gone from the operating theatre to the ward and been put to its mother's breast, or been given the bottle, within half an hour. The important factor is to see that the child gets its usual form of nourishment at its usual time. This is more essential when it is ill than when it is well.

Restraint is also bad, and I always see that the children are allowed to move about as they like. The child who is really ill will generally lie quite quiet, but the instant he feels well he will want to move about. Children are at all times restless individuals, and one wishes to introduce as few complications as possible into their mode of life at this critical juncture. It is the greatest mistake to tie children down in order to prevent their moving about. They



will not move about if it causes them any harm, and the restraint is almost invariably bad for them.

One generally affixes the dressing by means of a broad piece of strapping encircling the body just tight enough to take all strain off the stitches. This prevents a good deal of the pain, and also prevents any fear of the stitches cutting out and of the abdominal wound being burst open. It also prevents any harm coming to the wound from the child's moving about. It is quite surprising to see a baby sitting up in bed playing with toys some thirty-six hours after an abdominal section; but I am confident that children do much better in this way than they do if they are tied down in bed with sand-bags or straps.

## (2) APPENDICITIS.

Appendicitis does not, as a rule, attack infants, and I have never met with a case under five years of age. It is, however, frequently met with in children over this age. As compared with the same condition in adults, one notices the following peculiarities: the condition is nearly always extremely acute; a gangrenous appendix is much more frequently met with, and probably because of this, general peritonitis more frequently supervenes. The onset of the symptoms is exceedingly rapid, and the patient soon becomes extremely ill. Pus formation occurs early. The condition is very fatal in children if an early diagnosis is not made and treatment carried out promptly. Whatever may be said in favour of the interval operation in adults and of waiting until the acute symptoms have subsided before operating, there is nothing to be said for this in the case of children. If anyone will find a means by which we can look inside a child's abdomen and see the exact condition of the appendix without having to perform an operation, we shall then be able to know in which cases we can leave the patient to recover and in which we must operate at once. As, however, there are no such means at our disposal at present, there is only one course open to us—that is, to operate as early as possible in every case where we meet with acute appendicitis in a child. Admittedly many children will recover without operation; it is equally certain many children will die if not operated upon. It is impossible, even with the utmost care, to distinguish a case of simple catarrhal acute appendicitis from one of gangrenous appendicitis in the early stages. In the later stages a diagnosis is of no importance, as a child with a gangrenous appendix is almost certain to die. My own opinion, founded upon

considerable experience of both practices, is that there is only one course of treatment for cases of acute appendicitis in children, namely, to operate immediately within an hour or two of the diagnosis having been made. Every half-hour wasted after a diagnosis of acute appendicitis has been made in a child is seriously risking that child's life. I would go so far as to say that if every child suffering from acute appendicitis were operated upon within twelve hours of the onset of the disease by a skilled surgeon, under suitable conditions, the mortality from this condition in children would be something in the neighbourhood of  $\frac{1}{2}$  per cent. or less. This is no exaggeration, and with such good results there is no object in postponing operation, even though we admit that occasionally it may be unnecessary, when we consider the enormous risk that a mistake means when we are dealing with this condition.

You are probably all familiar with the symptoms of acute appendicitis in a child. I will, however, enumerate them in order to point out those symptoms to which we may attach most importance. The onset is usually sudden, the child being seized with pain in the abdomen, often after food, or after the administration of an aperient. The child seems ill, and sits or lies with the knees drawn up, and resents any attempt to put the legs straight out. He is probably sick, or feels sick; he is flushed, and there may be shivering, the child complaining of cold. The face becomes anxious in appearance. On examination it will be found that the abdomen is more or less rigid; the rigidity may be over the whole abdomen, or it may be confined to the right side. There is tenderness over the situation of the appendix, as evidenced by the child wincing on the least attempt to press in this situation, and in some cases a slight lump may be felt, though this is seldom an early symptom. The pulse will be found to be rapid and the temperature raised. The tongue is often coated, though this is not a very important factor; the child not infrequently complains of headache.

When one sees a child with these symptoms one should immediately consider the question of whether the child is suffering from an acute appendicitis. Such symptoms may, however, result from a great many other conditions in children, and therefore the diagnosis is often a matter of difficulty. Acute colic is not an uncommon condition in children, as they are often somewhat gross and ill-advised feeders. The points to attach the most importance to are, in my opinion, the condition of the abdomen and the relation of the pulse to the temperature. If the pulse is raised in excess of what one would expect with the temperature, one should be exceedingly sus-



picious of some intra-abdominal mischief. As a rule, in the early stages of appendicitis in children the temperature is not much raised, the ordinary temperature being from  $99^{\circ}$  to  $100^{\circ}$  F. The pulse, however, in such a case will frequently be found to be 120 or 130. This I believe to be a most important diagnostic factor. Further, in a difficult case one should never omit to make a rectal examination. In most children it is easy to pass one's finger high enough to be able to feel the appendix region, and one here has the advantage that there is no abdominal wall intervening to render examination difficult. It will often be found possible to feel a swelling in the situation of the appendix and to elicit pain on pressure in this region when nothing can be felt by the abdomen. I need hardly point out that this must be done with considerable care, as anything like rough examination of the appendix region may easily aggravate the condition.

When once the diagnosis has been made, or a serious suspicion of appendicitis aroused, the only right treatment is immediate operation. If the appendix is immediately removed it will probably be possible to do this through quite a small incision, and the child will almost certainly recover and be out of danger in two or three days. If, on the other hand, the case is left until an abscess forms, even should recovery occur, there is great danger of complications.

There is another point I should like to mention in discussing the symptoms and diagnosis of acute appendicitis in children. One sometimes sees a case in which a child has suddenly developed all the symptoms of an acute appendicitis. The case has been watched for a time, and at last it has been decided that an operation shall be performed. The doctor, perhaps, thinks that he will put it off till his next visit, or he has already arranged for the operation, when on again seeing the child he finds a considerable improvement in the symptoms. The pain and distress have disappeared; the child seems more comfortable; the sickness, previously present, has stopped and the temperature has gone down with a run. This abatement of symptoms often appears to be a matter of congratulation, whereas really it is often the most terrible of traps. What has happened is that the previous tension has been relieved, either by the stretching of a temporary barrier of lymph which had been thrown out from the abscess, or to the giving way of this barrier. As a result the inflammatory material is no longer under tension, and for a short time pain is relieved and the temperature is reduced. If nothing is done at this stage a few hours later the symptoms of acute general peritonitis will slowly develop, and instead of having

to deal with an acute appendicitis one has to deal with the much more serious condition of acute general peritonitis.

The following case, which I saw when I was assisting the late Mr. Herbert Allingham, very much impressed me with the importance and the danger of this train of events.

Mr. Allingham was sent for to go down to one of the London suburbs to operate on a little girl with an acute appendicitis. We went down to the house and were met on the doorstep by the doctor, who informed us that after all our visit would be unnecessary as the child had so much improved. On going up to the room we saw a little girl of about seven sitting up in bed and looking very comfortable, whereas in the early morning she had been sick, had been crying with pain in the abdomen, and had had a temperature of  $102^{\circ}$  F.; she now said that she felt all right, and was asking for food. Her temperature had gone down suddenly to subnormal. All in the house were congratulating themselves on the fact that the dreaded operation would no longer be necessary. Mr. Allingham examined the patient and discovered that there was a very marked swelling in the right iliac fossa, and that the pulse was 120. He insisted upon performing the operation immediately, and the operation was accordingly carried out. On opening the abdomen he evacuated an abscess containing three ounces of pus in the neighbourhood of the appendix, which itself was completely gangrenous. There can, I think, be no possible doubt that had he been led away by the apparent improvement in symptoms, that child would have been dead instead of being alive at the present day.

I have since frequently seen the same thing happen, and have never had reason to regret that I had insisted on opening the abdomen.

The results of the operation for acute appendicitis in children, when the operation is performed within a few hours of the onset of the symptoms, are exceedingly satisfactory. The important factors in performing the operation are to be as rapid as possible, to handle the intestine very lightly, and to get the child back to bed as soon as possible. I always set myself a maximum period of twenty minutes for the entire operation, and attempt, usually successfully, to complete it in considerably less. The technique should be very simple and involve as little handling of the parts as possible. The abdomen should be closed by a series of through-and-through sutures, as this saves considerable time, which is of much more importance than closing the abdominal wall in layers when dealing with children. Drainage is usually unnecessary, and I personally



never drain the abdomen unless there is an abscess, and not always then.

When, as is too often the case, one only sees the patient when there is already a large abscess or general peritonitis, immediate operation is, of course, the only treatment. Here, however, we have to deal with a very different condition of events. We have no longer to deal with an acute appendicitis, but with an abscess which is either local or general to the whole abdomen. This requires treating like any other abscess, that is to say, by incision and drainage, and the surgeon should not be tempted to do more than this. The patient's recovery depends entirely upon his power of resistance to the extremely acute infection from which he is suffering. The operation, apart from the benefits directly resulting from it, seriously militates against the patient's recovery, and therefore it should be reduced to the simplest possible procedure. The best practice, I am convinced, when dealing with these acute suppurative conditions in children, is to make a small incision, pass one finger into the abscess, pass a drainage-tube down the track, apply the dressings, and send the patient back to bed.

If there is a general peritonitis the only difference is that instead of the introduction of a single drainage-tube a counter-incision is made on the other side of the abdomen, and another drainage-tube introduced right down into the pelvis. This operation should not take more than five minutes. No stitches need be introduced, and the child is got back to bed as quickly as possible.

The patient, under such conditions, should be nursed in a slightly sitting position, usually called Fowler's position, which enables any pus or infective material to drain into the pelvis and away from the more dangerous area of the abdomen near the diaphragm. As a rule it is useless to administer any nourishment, as owing to the shock produced by the acute intra-abdominal condition the digestive functions are temporarily paralysed. Fluid, however, is of the utmost importance, and the child should be encouraged to drink as much as possible. This has a double value: first, it helps to wash away from the blood and tissues the toxins which are being absorbed from the infected area; and secondly, it takes the place for a time of the nourishment which is so necessary in any acute condition in a child. I believe greatly in the value of small doses of brandy, but it is a mistake to administer this so frequently that the child is reduced to a state of semi-drunkenness, which I have often seen happen. The injection of fluid into the rectum is generally the best method, as just after the anæsthetic the child will probably be sick

if the fluid is put into the stomach. The simplest way of introducing fluid in these cases is by passing a small No. 4 Jacques catheter into the rectum and allowing a warm saline solution to flow in continuously from a receptacle, which should be raised not more than a foot above the extremity of the tube in the rectum. Some means must be provided, of course, for keeping the fluid in the receptacle at the correct temperature, which should be about  $100^{\circ}$  F., so as to allow for cooling during its passage along the tube. If the fluid is allowed to run in too quickly it will almost certainly result in an action of the bowels and an evacuation; if, however, it runs in slowly it will be rapidly absorbed, and there will be no trouble in getting it retained. The fluid should be allowed to run in continuously at the rate of about half a pint to one pint an hour.

As soon as the most acute symptoms have passed off and the child has begun to turn the corner, nourishment should be administered in the form of milk in the case of young children, or of fish, eggs and albumin-water in the case of older children. Broth, beef-tea and the numerous meat extracts which are so frequently used are worse than useless; they are very little better than extracts of toxins and contain about the minimum of nourishment. A dose of castor oil should be given as soon as there is any reasonable prospect of its being kept down. Failing that, calomel or some other smart purge should be administered. In some cases enemata are to be preferred. Lately I have been in the habit of using hypodermic injections of pituitary extract, and this has been attended with great success. About half an ampoule of the extract administered every four to six hours will often make the difference between life and death in one of these cases. It acts by causing peristalsis of the bowel and by increasing the blood-pressure. Usually with the aid of this drug alone the bowels will act almost immediately after the injection.

Every care should be taken in nursing young children with acute abdominal conditions to give them plenty of pure air to breathe, and to see that they have no heavy clothes or blankets which by pressure upon the chest will interfere with free respiration.

### (3) SOME FORMS OF ACUTE OBSTRUCTION.

With regard to the other acute abdominal conditions met with in children they are of more pathological than practical interest, except perhaps to the surgeon who has to deal with them. With the exception of intussusception and appendicitis one can seldom make an exact diagnosis as to the cause of the trouble beyond the fact that



there is serious intra-abdominal mischief. The diagnosis of acute intra-abdominal conditions is one of the most difficult factors in surgery. It is fortunately not of very great practical importance. Almost all the acute abdominal lesions necessitate an operation, and if we can diagnose acute intestinal obstruction in the abdomen it is all we are called upon to do. None of these conditions can be adequately treated without operation, and all we have to decide is that an operation is necessary or otherwise.

There are numerous other causes of obstruction. Among the rare forms may be mentioned congenital dilatation of the colon, which is often first seen when the patient is suffering from acute intestinal obstruction. There will, however, always be a very marked history of exceptionally severe constipation from earliest infancy, and the passage of a finger into the rectum will immediately clear up the diagnosis, for in such a case it feels exactly as if the finger had been passed into the abdominal cavity. Internal hernia is occasionally met with. Cases of strangulation by Meckel's diverticulum, by a band or by a tubercular gland, etc., are seen from time to time in a children's hospital. I have even operated upon a child for such an out-of-the-way purpose as hunting for a tin soldier in the deep parts of the abdomen. I am sorry to say the tin soldier eluded me, and, to the best of my knowledge, is still reposing in the nethermost depths of that child's abdomen, without, however, causing him any apparent inconvenience.

Time will not allow me to do more than mention many of the other acute abdominal conditions which are met with in the practice of a large children's hospital. Cases of both chronic and acute obstruction due to tubercular disease of the bowel are sometimes seen. Pneumococcal peritonitis is one of those rare conditions we sometimes meet with, and one which is very difficult to diagnose apart from operation. Should it be diagnosed, however, I believe the best practice is not to operate. Gonorrhœal peritonitis I have certainly met with once, but it may be looked upon as quite unusual.

In conclusion, I should like to insist once more upon the importance of regarding all acute abdominal symptoms in children as requiring the most serious consideration ; and, where a serious intra-abdominal lesion is diagnosed or suspected, upon the necessity for operating as soon as possible.

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## FLAGELLATE DYSENTERY IN CHILDREN.

By MELLO-LEITÃO, M.D.,

*Lecturer on Children's Diseases in the Medical College, and Assistant Physician to the Children's Hospital, Rio de Janeiro.*

DYSENTERY, which used to be described as a single disease, is nowadays regarded as a syndrome due to a variety of animal and vegetable parasites.

Prof. Olinto de Oliveira classifies dysentery and dysenteric enteritis as follows: (1) Dysentery due to bacilli. (2) Follicular colitis and entero-colitis which are seldom primary but usually secondary to inflammatory lesions of the bowel. (3) Muco-membranous entero-colitis. (4) Sporadic cases due to rectal polypus, hæmorrhoids, irritation caused by foreign bodies, ankylostomiasis, *Anguillula stercoralis* and *Balantidium coli*. (5) Amœbic dysentery.

Prof. Olinto does not mention flagellates as a cause of primary dysentery. He mentions, however, the frequent occurrence of flagellates in amœbic dysentery, and states that in chronic forms of this disease the *Trichomonas intestinalis* is so frequently associated with amœbæ that one is seldom found without the other.

Castellani and Chalmers classify dysentery and dysenteric diarrhœa as follows:

A. Dysenteries caused by animal parasites: (1) Protozoa, (2) Platyhelminthes, (3) Nematelminthes, (4) Arthropoda. B. Dysenteries caused by bacteria. C. Pseudo-dysenteries, *i.e.* disorders due to irritation by fish-bones, glass, cancer, or to inflammation of adjacent organs. The protozoal dysenteries are subdivided into entamœbic, Laveranic, Leishmanic, and ciliate. The writers refuse to recognise a clinical flagellate dysentery, as is shown by the following quotation: "It is convenient to describe as an appendix to these dysenteries the diarrhœas said to be due to flagellate organisms, though these can in no way clinically be termed dysentery."

The only forms of dysentery which have received much attention are entamœbic dysentery and bacillary dysentery. Ciliar dysentery was described in 1857 by Malmsten, who found infusoria in a man of 35 suffering from diarrhœa whose stools contained blood and pus and numerous *balantidia*.

When Schaudinn demonstrated the pathogenicity of *Entamœba histolytica* in tropical dysentery, and Shiga, Kruse and Flexner showed bacilli to be the cause of tropical dysentery, the existence of ciliar dysentery was denied. Solowjew, however, in 1901 found



ciliate organisms in cases of dysentery, and described them as penetrating the bowel-wall and giving rise to ulceration, which might extend deeply into the subserosa. He had also seen them in the blood and lymphatic vessels of the intestinal wall. His observations were subsequently confirmed by Strong and Musgrave, Askanazy, and Robin. In 1905 Koslowsky mentioned ciliata as a primary cause of dysentery, and in 1907 Rheindorf published his careful researches, in which he isolated ciliar dysentery as an autonomous disease.

Papers on the pathogenicity of flagellates are less numerous. In 1859 Lambl was the first to describe a flagellate protozoon in the mucous stools of children, but he did not attribute to it any pathogenic importance.

Kruse and Pasquale in their investigations on dysentery reported the presence of *Lamblia intestinalis* and *Cercomonas hominis* in dysenteric stools. Reports on the cercomonas are also to be found in papers by Massiutin, Fenoglio, Zuncker, and Quincke and Roos. Councilman and Laflen found numerous *cercomonades* in the mucous evacuations of chronic amoebic dysentery, and Roos describes an infusorial diarrhœa due mainly to *Cercomonas hominis*. All these researches, however, were carried out in adults. Cahen observed typical *cercomonades* in the motions of healthy and sick children. An interesting observation on the *trichomonas* is published by Epstein. In a room in his clinic occupied by four children, three who drank some water in addition to their ordinary diet fell ill with *trichomonas* diarrhœa, whereas the fourth child who did not have any water remained well. But when this child had been given 500 c.c. of the same water as the other children had drunk he also suffered from diarrhœa. In Epstein's cases the stools were only liquid and did not contain mucus or blood.

Frshezjesski regards *Lamblia intestinalis* (*Megastoma entericum*) as the primary cause of chronic intestinal catarrh with dysenteric motions. Jacksh, who found *Lamblia* in children's stools, denies them a pathogenic rôle, as do also Kruse and Pasquale. Olinto de Oliveira, who has frequently found *trichomonas* and *Lamblia* and on two occasions *cercomonas* in the sanguineous purulent stools of chronic dysentery, denies these flagellates any importance. A new flagellate was described by Bell in 1909 under the name of *Cercomonas dysentericæ* as the cause of a form of dysentery.

In the Children's Hospital Dispensary of Rio de Janerio we have personally observed fifty-four cases of dysenteric diseases. In the stools which were examined at the hospital laboratory flagellates were found in thirty-two cases, and *Entamœba tetragena* in four cases.

In 2135 stools encysted forms of *trichomonas* were found only five times in healthy children, all over four years of age, and twice in non-dysenteric enteritis in children above two years of age. We regard the presence of flagellates in dysenteric stools as more than a mere coincidence for the following reasons: (1) Flagellates were never found in children under four years without there being enteritis, and the diarrhoea was always dysenteric in the children who were under two years.

In the cases of dysentery with flagellates present in the motions, as soon as the flagellates disappeared improvement took place and disappearance of the cysts indicated recovery.

To determine whether the flagellate—in almost all our cases it was the *trichomonas*—had entirely disappeared and was not persisting in the intestine, though absent in the stools, we gave a cathartic to seven cases who had recovered, and carefully investigated the liquid stools with or without centrifugalisation, but were unable to find the flagellates or their cysts.

Before giving a clinical description of flagellate dysentery we will say a few words on other protozoal dysenteries in children. Amœbic dysentery, which is the clinical expression of infection by *Entamœba histolytica* (Schaudinn), *Entamœba tetragena* (Viereck) or *Entamœba minuta* (Elmassian) is uncommon in childhood.

Before Schaudinn had shown that there were two forms of amœbæ quite distinct from one another—viz. an *Entamœba coli*, which was harmless, and another, *Entamœba histolytica*, which was the true cause of entamœbic dysentery, the following had published papers on amœbæ in infants' stools: Pfeiffer (1891), Epstein (1893) on five cases, Harris (1898) on four cases, Amberg (1901) on five cases in children from two to five years old. The ages of the 102 children reported by Olinto de Oliveira were as follows: Under one year, none; 1–2 years, five cases; 2–5 years, fifty-three; 6–10 years, thirty; 10–15, fourteen cases. The youngest case was in a child fourteen months old.

Our four cases were children aged fifteen months, twenty months, five years and seven years respectively, and all showed *Entamœba tetragena*, which is commoner in Brazil than *Entamœba histolytica*.

Ciliar dysentery is, perhaps, more uncommon in childhood than amœbic dysentery. Olinto de Oliveira found *balantidia* only twice in dysenteric stools; Rheindorf (1907) also reports a few cases. Pathogenic ciliata are all *heterotricha*, and consist of *Balantidium coli* (Malmsten), *Balantidium minutum* (Schaudinn), *Nyctotherus faba* (Schaudinn) and *Nyctotherus giganteus* (Krause). Some holo-



tricha have also been found in the dysenteric stools of adults—viz. *Chilodon dentatus*, *Chilodon incimatus* and *Colpoda cucullus*. Ciliar dysentery-like amœbæ is occasionally fatal. Post mortem ciliates are found in necrotic patches in the submucosa and in enlarged lymphatic vessels (Rheindorf).

Flagellate dysentery is the commonest variety of infantile dysentery, and is rather more frequent in children under five years than in adults. The flagellates most commonly found in the stools are *Trichomonas intestinalis* (Leuckart), *Lamblia intestinalis* and *Cercomonas hominis*. Martini has reported some cases of diarrhœa due to a new flagellate *Provazekia Cruzi* (Hartmann and Chagas), but in our cases the *trichomonas* and *lamblia* only were found.

TRICHOMONAS INTESTINALIS, Leuckart—*Cercomonas hominis*, Davaine, 1854; *Cercomonas intestinalis*, Lambl, 1875; *Protorixomyces coprinarius*, Cunningham, 1881; *Monocercomonas hominis*, Grassi, 1882; *Cimænomonas hominis*, Grassi, 1882; *Trichomonas hominis*, Grassi, 1888; *Cercomonas coli hominis*, May, 1891; *Monocercomonas hominis*, Epstein, 1893, believed by several authors to be identical with *Trichomonas vaginalis* (Donné)—is a pear-shaped flagellate, with a breadth of from 18 to 25  $\mu$ , with three flagella at its broadest end, and an undulating membrane. The cytoplasm contains a rather indistinct nucleus, and one or several non-pulsating vacuoles. The parasites are very abundant in mucous stools, and are sometimes encysted.

LAMBLIA INTESTINALIS, Lambl.—*Cercomonas intestinalis*, Lambl, 1859; *Hexamitus duodenalis*, Davaine, 1875; *Dimorphus muris*, Grassi, 1879; *Megastoma entericum*, Grassi, 1881; *Megastoma intestinale*, Blanchard, 1886—is a pear-shaped flagellate 10 to 21  $\mu$  in length and 5 to 13  $\mu$  in breadth; flagella of about equal length, (9 to 14  $\mu$ ). "The body is finely granular and has a very thin cuticle, which does not entirely prevent changes of form of the body; the very motile tail-like appendix in the frontal plane is flattened. The excavation at the anterior extremity, which is directed obliquely forward and with its border projecting backwards and interrupted, no doubt corresponds to the peristoma and serves as a clinging organ. The first pair of flagella (anterior flagella) arise from its anterior edge, the second and third pairs (lateral and median flagella) from the posterior edge, whereas the tail flagella are inserted at the posterior end of the tail. In life the anterior and lateral flagella sway only with the thinner part projecting beyond the body; in the rest of their course they appear to be almost attached to the body; the median and tail flagella are quite free.

There are knob-like formations at their origin. The entire flagellate apparatus appears to be connected with the nucleus. The nucleus is of a dumb-bell shape, has a nucleolus in each half, and lies anteriorly in that part of the body that is excavated. Division forms have not been observed, but there are encysted stages. The oval cysts measure  $10\mu$  in length by  $7\mu$  in breadth, they are surrounded by a fairly thick hyaline layer, through which the contour of the creature can sometimes be seen quite distinctly" (Max Braun).

Numerous *lamblia* are found in dysenteric motions. In thirty-two cases of flagellate dysentery which we observed *lamblia* and *trichomonas* were present as follows: *Trichomonas intestinalis* in 9 cases; *Lamblia intestinalis* in 3 cases; *Trichomonas* plus *Lamblia* in 20 cases. In five cases with flagellates and no bowel trouble *trichomonas* only was present; of the cases of enteritis without dysenteric motions, one showed *trichomonas* only and another *lamblia* only. The ages of our cases of flagellate dysentery are as follows:

Under 1 year, 7 cases; 1 to 2 years, 8 cases; 2 to 4 years, 9 cases; over 4 years, 7 cases.

Flagellate dysentery is thus not uncommon in infancy; the youngest case was a little girl aged 2 months and breast-fed. It is interesting to compare our figures with those of Olinto de Oliveira.

| Age.           | Flagellate dysentery.<br>Mello-Leitão. | Amœbic dysentery.<br>Olinto de Oliveira |
|----------------|----------------------------------------|-----------------------------------------|
| Under 1 year . | 7 (21·8 per cent.) .                   | 0 ( 0 per cent.)                        |
| 1- 2    " .    | 8 (25       "   ) .                    | 5 ( 4·9       "   ) .                   |
| 2- 5    " .    | 12 (37·5     "   ) .                   | 53 (51·9     "   ) .                    |
| 6-10 years .   | 5 (15·5     "   ) .                    | 30 (29·4     "   ) .                    |

In order to show the pathogenicity of flagellates in children's dysenteries, we give below the occurrence of flagellate dysentery and also of dysenteries without flagellates or amœbæ as well as the occurrence of flagellates in healthy children.

| Age.           | Flagellate<br>dysentery. | Other<br>dysenteries. | Flagellates<br>in health. | Notes.    |
|----------------|--------------------------|-----------------------|---------------------------|-----------|
| Under 1 year . | 7 cases .                | 4 cases .             | 0 cases .                 | —         |
| 1- 2 years .   | 8   " .                  | 6   " .               | 0   " .                   | —         |
| 2- 3    " .    | 5   " .                  | 4   " .               | 1   " .                   | Enteritis |
| 3- 4    " .    | 4   " .                  | 1   " .               | 1   " .                   | Diarrhœa  |
| 4- 5    " .    | 2   " .                  | 0   " .               | 0   " .                   | —         |
| 5- 6    " .    | 1   " .                  | 1   " .               | 1   " .                   | —         |
| 6- 7    " .    | 2   " .                  | 1   " .               | 1   " .                   | —         |
| 7- 9    " .    | 1   " .                  | 0   " .               | 2   " .                   | —         |
| 9-12    " .    | 2   " .                  | 1   " .               | 2   " .                   | —         |

Sex has no influence in flagellate dysentery; 17 of our cases occurred in boys and 15 in girls. Flagellate dysentery is more frequent at the end of summer and in the first months of autumn. Of our 32 cases, 6 occurred in March, 5 in April, and 10 in May; the other 11 cases occurred irregularly in the remaining months of the year.

The onset is, as a rule, not abrupt, but is preceded for a day by diarrhoea with faecal motions, and by fever. The next day the stools contain mucus and blood and become dysenteric. Free flagellates are then abundant in the evacuations. The motions rarely exceed twenty *per diem*; the greatest number of motions which we observed was twenty-two in the twenty-four hours. They always contain only a little blood and an excess of mucus. We never observed griping or straining accompanying defaecation. The tongue is moist and seldom coated with white fur. There is no vomiting. Though flagellate dysentery is most frequent in infants that have been weaned we have observed it in the breast-fed.

The circulatory and respiratory systems show no abnormality. The urine is diminished in quantity, is yellow-reddish or brownish in colour, and sometimes contains albumin and hyaline casts.

The motions, which at first are bloody, become muco-purulent on the third or fourth day. As recovery takes place they become less frequent and more faeculent and contain less mucus, and gradually improve until they become quite normal. Flagellates become encysted and at last disappear. The disease is always of an acute type, and is easily cured: it never lasts longer than three weeks, its course being as a rule from six to eight days. The prognosis is good. Only one of our cases died—a marasmic girl, aged 16 months.

A diagnosis between flagellate and other dysenteries by the clinical phenomena only is impossible in most cases, but very easy by microscopic examination of the stools.

Treatment is simple; magnesium sulphate (7 per cent.) and water diet (in infants under two years) or milk (over two years) will be efficacious in most cases. Sometimes, however, enemata of collargol (1 per cent.) or electrargol are required.

#### SUMMARY.

(1) To the other forms of dysentery a primary flagellate dysentery is to be added.

(2) Flagellate dysentery is due to *Trichomonas intestinalis* (Leuckart) and *Lambia intestinalis* (Lambl.), either separately or in combination.



(3) Flagellate dysentery is a benign disease, and the most frequent form of dysentery in infants.

(4) *Trichomonas* and *lamblia* are pathogenic to infants under three years.

(5) Flagellate dysentery does not depend on the infant's diet.

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### A CASE OF FATAL HÆMORRHAGE FROM THE THROAT.\*

By J. D. ROLLESTON, M.D.,

*Assistant Medical Officer, Grove Fever Hospital, London.*

A girl, aged 6 years, was admitted to hospital on October the 22nd, certified to be suffering from diphtheria. Beyond an attack of whooping-cough at the age of three years she had until recently been a healthy child, and there was no family history of bleeding.

\* Specimens of the case were shown at the Section for the Study of Disease in Children of the Royal Society of Medicine, on November the 22nd, 1912.

Five weeks before admission she had had measles, since when her voice had been husky. On October the 20th she complained of sore throat, and on the 22nd she had a croupy cough and the neck glands became swollen.

*Condition on admission.*—Deposit on both tonsils and uvula, slight nasal discharge, voice husky, stridor, croupy cough and dysphagia, Temperature  $100^{\circ}$  F. 16,000 units of diphtheria antitoxin given.

October the 23rd.—Deposit clearing away, leaving marked ulceration of tonsils and uvula. No fœtor. No Vincent's organisms found in the throat smear. Temperature  $103^{\circ}$  to  $100^{\circ}$  F.

October the 24th.—Dysphagia less. Temperature  $102.4^{\circ}$  to  $99^{\circ}$  F.

October the 25th.—At 9 a.m. she suddenly gave a cough and a huge gush of blood poured out of the mouth. Death preceded by marked cyanosis occurred within five minutes.

No diphtheria bacilli but only cocci were found in three successive cultures from the throat and one from the nose.

*Necropsy*: October the 26th.—Abscess cavities in both tonsils, ulceration of the uvula, soft palate, epiglottis, frænum epiglottidis, valleculæ, and ary-epiglottidean folds. Deep ulceration of laryngeal portion of pharynx exposing muscular tissue. Three small superficial ulcers above right vocal cord. The exact site of the bleeding vessel was not determined, but there was no evidence of erosion of external carotid, internal carotid or internal jugular, nor of any glandular abscess.

Apart from its occurrence in connection with tracheotomy death from asphyxia caused by entrance of blood into the air-passages is so uncommon in children that the present case is one of unusual interest. A few cases of fatal hæmoptysis in young children from pulmonary tuberculosis or gangrene have been recorded (Meusnier, Magruder), but there was no evidence of either disease in the present case. Erosion of the neck vessels giving rise to fatal hæmorrhage is a very rare occurrence, and practically occurs in only two conditions—scarlet fever and gangrenous angina. In scarlet fever erosion of the external carotid has been recorded by Baader, Huber, Oppikofer, Griffiths and Riddell, of the lingual artery by Ghon and Oppikofer, and of the internal jugular vein by Hensch, and Griffiths and Riddell. Hecker has recently published a case in which, as in my own case, the bleeding vessel was not discovered, but the branches of the superior thyroid artery or the tributaries of the internal jugular vein were regarded as the probable source of the hæmorrhage.

Mr. A. R. Tweedy showed a specimen at the Laryngological

Section of the Royal Society of Medicine on November the 1st, 1912, of ulceration of the internal carotid in a child, aged 1 year and 8 months, following a sore throat, which may possibly have been of scarlatinal origin, especially as the patient's brother had previously had some swollen submaxillary glands.

In cases of this kind the fatal hæmorrhage may occur spontaneously, as in the present case, or be due to opening a hæmatoma under the mistaken belief that it was a tonsillar or cervical abscess, as in cases reported by Huber and by Griffiths and Riddell. This mistake is all the more likely to be made as suppurative cervical adenitis may occur at any period of scarlet fever, and in some cases the erosion of the vessel is secondary to a cervical abscess or cellulitis.

There was no history or evidence of scarlet fever in my own case, but it is highly probable that the pharynx and larynx were pre-disposed to infection by the recent attack of measles, especially as the child's voice was still husky when the fatal illness began.

Death from pharyngeal hæmorrhage may also be one of the terminations of gangrenous angina, which may be either a primary condition or be secondary to other diseases besides scarlet fever. My own case, however, did not show the fœtor and prostration characteristic of this disease, nor the clinical and bacteriological features of the closely allied condition, Vincent's angina.

It should rather be regarded as an instance of ulcerative sore throat to which the name pseudo-diphtheria is sometimes applied (Welch and Schamberg). This form of sore throat is usually due to streptococci, is often accompanied by laryngeal involvement, especially when it is secondary to measles, and frequently runs a severe course. Thus of thirty-five cases recently reported by Dr. Goodall twenty-five were fatal. In nine of his cases the larynx was involved, though the principal lesions, as in my case, were in the pharynx, and two had recently had measles. In none, however, was death due to sudden hæmorrhage from the throat. The bleeding vessel in the present case was not determined, and, as I was not present when it occurred, I am not prepared to say whether the hæmorrhage was venous or arterial. It is probable, however, that the laryngeal portion of the pharynx in which the ulceration is deepest was the site of the hæmorrhage.

Before making the post-mortem examination, I thought that death might have been due to erosion of the internal or external carotid or internal jugular. These vessels, however, were found to be intact. The internal organs, moreover, were not blanched as in death due to



hæmorrhage, but engorged, and the blood in the bronchi and lungs, the acute vesicular emphysema and distended right heart showed that death had been due to asphyxia. Further, after opening of a large vessel, death usually occurs within a minute, whereas in death from asphyxia due to erosion of a smaller vessel, the agony is more protracted.

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## Royal Society of Medicine.

### SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

*Friday, December the 13th, 1912.*

Mr. A. H. TUBBY, *President, in the Chair.*

### DISCUSSION ON THE TREATMENT OF HEART DISEASE IN CHILDREN.

Dr. EDMUND CAUTLEY said that reference to the standard works of twenty-five to thirty-five years ago showed that the recognition of the frequency of heart disease in children was of comparatively recent origin. Modern methods of treatment were a survival, a modification, and an

improvement on those of the past. Especially, the improvement depended on the recognition of myocarditis and its results. To some extent treatment was modified by age, for in childhood the heart was a growing organ. The degenerative changes consequent on age, alcoholism, syphilis and renal disease were extremely rare. Functional disorders were comparatively unimportant. In many so-called functional cases the primary cause was myocarditis, a sequel of infective disease.

Rest was the most important factor in treatment. Its duration must be in proportion to the degree of dilatation dependent on myocardial disease. It was important during rapid growth and in cardiac disorders at puberty, periods at which overstrain must be carefully avoided. The duration of rest differed in endocarditis, myocarditis, and pericarditis; it was most prolonged in myocarditis. Subsequently massage and exercises, passive and active, were useful. Nauheim methods and electro-therapeutics must be considered.

In acute inflammations, the older methods of bleeding, blistering and mercurialisation were still used in a modified form. Blistering was of doubtful value in endocarditis and myocarditis, but appeared distinctly beneficial in pericarditis. Bleeding was used with caution. Mercury was of value if the liver became congested. The pill of digitalis, squill, and mercury had not been improved upon. Purgation was necessary in œdema and backward pressure; and in all cases the bowels should be kept open by mild laxatives, such as senna. Diuretics were also needed, and their action could be assisted by dry-cupping over the kidneys. Attention was paid to diet in acute inflammations and in cardiac failure; to the limitation of fluid and salts in œdematous states; and to the ordinary diet of compensated valvular disease.

In the matter of drugs, the value of digitalis and its modern laboratory preparation was referred to. Formerly, the infusion was thought the most valuable; now, opinion was in favour of the tincture; whilst some preferred digalen, digitalin, or digitalone. Diuretin and theocin sodium acetate were comparatively modern drugs. Vaso-dilators were practically never required. Morphia, aconite and belladonna might be of value. The value of salicylates in myocarditis and of iodides in inflammation was open to discussion. In pericardial affections the use of paracentesis and of drainage was considered, as well as the more recent operation of cardiectasis for adherent pericardium.

Dr. JAMES MACKENZIE dealt with some manifestations of a healthy heart in the young, which were frequently taken as indications for treatment. He said that as a first step to treatment it was necessary to have a clear idea of what we were going to treat, and the significance of this was brought out by considering what was the essential purpose of a medical examination. This was to determine the prognostic significance of certain phenomena and their bearing on the presence or likelihood of heart failure. It was shown that this purpose frequently failed in dealing with such phenomena as irregular action of the heart and murmurs. The absence of reliable data had hitherto militated against the obtaining of a prognosis based on trustworthy grounds, or a basis for an intelligent therapy.

A description was given of the means by which this deficiency could be made good, and was illustrated by recent observations on the mechanism by which certain irregularities were produced, and their prognostic significance. The bearing of a functional murmur on the heart's efficiency was discussed, and it was shown that certain irregularities and functional murmurs were

perfectly compatible with healthy hearts. The relation of functional murmurs to heart failure was considered, and attention was drawn to the fact that the cause of the murmur was not the cause of the heart failure, but that the heart failure was invariably due to the impairment of the heart muscle. The means by which impairment of the heart muscle could be detected was shown in many cases to depend not so much on the physical signs, as upon the due appreciation of the functional efficiency of the heart muscle. The signs by which we could recognise the functional efficiency of the heart had not received that consideration which was their due, and it was on this account, and also on account of the imperfect teaching of cardiac symptomatology, that a mistaken conception of the meaning of these phenomena was so wide-spread. Evidence of these misconceptions drawn from personal experience were offered, showing how normal phenomena had been taken as indications for treatment, and as a consequence how cardiac therapy had become burdened by many useless drugs and methods.

Sir JAMES GOODHART said it would be impossible to express his own feelings on the subject of the debate better than Dr. Mackenzie had just expressed them. As he had had forty years of examining these cases he felt he had a right to venture an opinion. On one point he was not inclined to agree with Dr. Cautley. He understood Dr. Cautley to say that he did not think functional disease in childhood was common, but he (Sir James Goodhart) was there to say that if he had estimated heart conditions aright, he saw many more cases which were said to be heart disease in children in whom there was nothing the matter than he saw of heart cases in which there was something the matter. And the reason was, as Dr. Cautley said, that though bad heart cases were recognised at once, there were a large number of borderland cases in reference to murmurs which were thrown into the limbo of diseased hearts, but in which there was no disease whatever. He had recently been consulted about a delicate child who had suddenly fainted after going to church and being somewhat excited. The child was put to bed and condemned to remain there without being allowed to move for weeks. But there was nothing the matter with her. After recovering from her faint the heart was quite regular. The apex beat might be in a different position from the normal, but in children it varied enormously. Like Dr. Mackenzie, he had had a large amount of unpleasant correspondence with various medical men in regard to this condition. The consulting physician was placed in a difficult position, for a patient came to him and said, "Dr. So-and-So says there is heart disease," but the consultant thought there was no heart disease. In such a fix somebody had to be sacrificed, and the public would regard the consultant as either a very wise man or a fool. The fact was that the man in general practice did not take time to ponder his diagnosis; because the patient had fainted he was apt to say it was heart disease; the patient was put to bed and compelled to remain there without the matter having been properly thought out. He pleaded for more time to be taken over the diagnosis; for in these hurried diagnoses somebody's reputation had to suffer. The treatment of all these cases was largely a matter of rest, and the crux of the treatment was to know how much rest was required; for even in cases of definite advanced heart disease there could be too much rest. The patient should be allowed to get up as early as possible under careful watching. Even in the case of children with heart disease one could order too much rest.

Dr. JOHN HAY said that whatever views were held as to the organism



causing rheumatism, most would agree that it was an infective process by an organism, probably related to the streptococcic group, and he believed it took place in childhood. So that the outstanding difference between the treatment of heart disease in children and in adults seemed to be that in children one was dealing with an infective process in its inception; while in adults one was dealing rather with the effects of that infection, such as the sclerosis and the myocardial changes. Therefore, the prophylactic treatment was an aspect which needed emphasising. The treatment in the active stage and during the subsequent "slumbering infection" varied by exacerbations made all the difference to the future life of the individual. From five or six years onward rheumatic disease was one of the most fatal of illnesses, and he did not think prophylaxis had been sufficiently insisted on by the two openers. In order for prophylaxis to be efficient it was necessary to have clear ideas, as far as they were possible on such a subject, as to rheumatic auto-infection, and the idea was gaining ground that the portal of entry of the infecting organisms was the naso-pharynx—an idea which was supported by a recent paper in the 'British Medical Journal.' He suggested that when a child showed any evidence of rheumatism the naso-pharynx should be persistently treated from that standpoint, parents being persuaded to bring the child as regularly for that as for adenoids. If this were done he felt sure more children would be enabled to reach maturity. The practitioner should be on the look-out for peevishness and fractiousness and anæmia, with "growing pains" about the child. The course he recommended was now easier owing to the systematic examination of school-children, and the radical attention being given to the tonsillar condition would probably bear good fruit in the future. With regard to the doubtful cases, one felt that the occurrence of arrhythmia had been misunderstood when combined with pallor and slight faintness. The medical man took the grave view, for it was the unknown which was feared. Many forms of arrhythmia could be recognised without the polygraph. The pulsus alternans could be recognised in the ordinary taking of the blood-pressure, for a point was noticed at which the smaller beats ceased to reach the wrist. Until the full meaning of these arrhythmias was understood one should not attribute too much significance to the slighter murmurs which were heard; then there would be fewer persons leading miserable lives as condemned examples of cardiac disease. With regard to dilatation and varying size of the normal heart, there was one good rule which he had found helpful in the case of a child suffering from rheumatism, or diphtheria, or influenza. On the first occasion of seeing the child he marked out on the chest-wall with silver nitrate the left and right limits of dulness; this mark persisted for the ensuing few weeks, and formed a real test of what was taking place in regard to alterations of size and position. In diphtheria one might find a rapid increase to the left. For pericarditis prolonged rest had been mentioned; and the late Dr. Barnard also mentioned the necessity of increased rest after pericarditis, because the softening of the pericardium had interfered with one of its functions, that of restraining sudden dilatation of the ventricles following on too early exercise after the illness. It would be agreed that the chief indication for paracentesis was dyspnoea. In rheumatic cases the occurrence of fluid was rare. He would like to hear the opinion of those present as to the value of alcohol in the treatment of these children. A Viennese professor said that alcohol should be excluded from the pharmacopœia of children, and he, the speaker, would like to hear what evidence there was that alcohol was actually a cardiac stimulant. It had a

short temporary action as a carminative, but his impression was that it was not a true cardiac stimulant.

Dr. J. WALTER CARR limited his remarks to the treatment of acute rheumatic affections of the heart in children, especially as the treatment of chronic heart disease in children did not differ materially from the treatment of that in adults. His experience was drawn mainly from cases in hospital wards, in which functional diseases were not usually met with. Dr. Mackenzie and Sir James Goodhart saw patients in a different social position, and so they encountered these functional states. He had little to add to or criticise in what Dr. Cautley said. There should be rest first and foremost, of duration proportioned to the rapidity of the pulse and the degree of carditis present. The rest should be more prolonged if there was pericarditis as well as myocarditis and endocarditis, and most prolonged where there were nodules, because they pointed to a myocarditis in very aggravated degree. But in any case in which one was dealing with rheumatic trouble in the heart one must assume that myocarditis was practically invariably present. His experience with regard to salicylates was similar to Dr. Cautley's. Repeatedly he had seen, in patients who were taking salicylate of soda, relapses of cardiac rheumatism occur, and the super-vention of pericarditis. A few weeks ago a child, aged 9 years, came in with an acute rheumatic attack, and under the administration of salicylate of soda there was rapid improvement, and the temperature sank to normal. The boy was continued on 50 gr. per day and kept at rest, but after the temperature had been normal a week acute pericarditis supervened. He could recall many similar occurrences. He had seldom tried the heroic doses which Dr. Lees favoured, but in the one or two cases in which he did the cardiac weakness developed so rapidly that he was thankful to get down to smaller doses. He had many times tried the treatment with which the name of Dr. Richard Caton, of Liverpool, was associated, that of prolonged rest, with blistering over the præcordium, and moderate but prolonged doses of iodide; but, like Dr. Cautley, he had not seen any marked benefit from it beyond what he had seen resulting from rest alone. He used the ice-bag generally in acute pericarditis, and it often gave some relief. If the child liked it he persevered with it; but if not he gave it up. Paracentesis pericardii for all practical purposes was never required in rheumatic pericarditis. In convalescence, though the patient was anæmic and iron seemed to be indicated, it frequently disagreed with the patient, and it seemed to favour the tendency to relapse. With regard to digitalis in these cases, he knew of no more valuable aphorism in Dr. Mackenzie's writings than that in which he said that digitalis was useless when the heart was in the grip of a toxin. He (Dr. Carr) realised that so much that he practically never used it in the acute or the subacute stages; he had never seen it do good then, or slow a rapidly acting heart; therefore it was likely to be harmful rather than beneficial. But there was one food which he accidentally found to be beneficial in the convalescent stage—namely, pure cod-liver oil; not in the dilute form it assumed when combined with malt and other things. He gave it in doses of half a drachm, increased to a drachm, two or three times a day. Children took it very well, and he had seldom seen it disagree. Massage and regulated movements he had tried in some cases, but he had seldom been able to trace to them marked beneficial results. To summarise, it must be admitted that to a large extent, until there was available an effective anti-rheumatic vaccine, the treatment of these conditions was palliative, and in a few there was little or no improvement; the child went

steadily from bad to worse, there were successive relapses, and finally death supervened. Fortunately, in most cases temporary or steady improvement occurred, tempered from time to time by a tendency to relapse. Though almost invariably a mitral murmur was left there was often very little dilatation, and the child left the hospital with comparatively little damage to the heart, and its prospects in life were not seriously impaired. But in order to achieve these favourable results early treatment was essential.

Dr. G. A. SUTHERLAND said that, with regard to signs found in functional disturbance on physical examination, it was important to recognise that many of those symptoms which were frequently associated with heart disease were very common in children apart from the existence of heart disease, viz. breathlessness on exertion, palpitation, fainting, præcordial pain, and distress. Those were commonly regarded by the lay public as indications of heart disease, and not infrequently the medical attendant found it a convenient diagnosis to make. But in most cases those signs were not due to heart disease, but to a part of the anatomy which the pure cardiologist had not recognised, namely, the central nervous system. With regard to acute heart disease, the most important factor in treatment was rest. In addition to that, he did not think it mattered whether blistering, or painting, or hot fomentations, or cold applications were used. Dr. Mackenzie now and in his previous writings had brought out the very important point with regard to organic heart disease that one should not lay so much stress on the physical conditions found. With regard to adults, he believed that statement held good in most cases, and the point which Dr. Mackenzie emphasised was of the very greatest importance. But in the case of children some qualification must be made, for in most children after the carditis or valvulitis (*i. e.* the active condition) settled down the mischief was done, and as a rule there were no symptoms left. The symptoms did not usually develop until much later in life. The child with such a damaged heart might pass through adolescence without symptoms, as they did not appear until later. Thus, if prognosis and treatment in such cases were to be based upon the symptomatology, there would be but little to go upon. Much was to be learned from physical examination of the heart. It was by that alone, in many cases in children, that the heart condition could be determined. Dr. Mackenzie had entered a protest against the treatment of certain cardiac irregularities, and he (Dr. Sutherland) wished to protest against the treatment of hearts of children in whom the whole activity of the disease had passed off, leaving no symptoms. Those who were seeing the class of children attending public elementary schools knew how often the child was referred to someone because it was found that the heart was affected and some treatment was supposed to be necessary. In the absence of symptoms no direct heart treatment was required, but treatment was needed, as Dr. Cautley mentioned, to prevent the further rheumatic infection and prevent strain on the heart. If the child went about taking exercise in its own way it would not strain its heart; but if ordered to do certain exercises which were carried out by ordinary healthy children the heart would suffer.

Dr. ALEXANDER MORISON said that digitalis used in any febrile condition failed to have any influence in checking the rapidity of the heart's action. But, no doubt because of the traditional dread of the consequences of the use of the drug, opium was not pushed as it should be in these cases. Owing to the constitutional excitement in a child one found a sort of pathological belladonnaism—a quick pulse, dilated capillaries, a dilated pupil,



and a standing physiological antidote to over-dosage by opium. As a rule, too little opium was given in the treatment of acute heart disease, properly so called, and the dread of it was greater than was justified. With regard to the chronic conditions, much depended on whether the heart was influenced by its surroundings. In the condition of cardiac infantilism one found a patient aged fifteen or sixteen with the development of a child of ten or eleven years of age. The child was very anæmic, undergrown, puberty was delayed, and after death he had found the thyroid gland atrophic. For that reason it had been his custom to give these children thyroid in the expectation that the long-continued labouring heart would thereby have its activity diminished and its power thus conserved. There was an exhaustion of that gland in consequence of the labour it had had to deal with. His experience of cardiectasis, which was practised for the relief of these cases, had not been very rosy. His most successful case was that of a young man who had come under his care in his "teens," and was much relieved by removal of ribs to give more space for the heart. He did well for four years, and then had an opportunity of going to a convalescent home; but in six weeks he came back to hospital with manifestations of infective endocarditis, and died in a month. His pericardium was totally adherent to his skin flap. So long as there was no drag on it, adhesion of the pericardium to the skin flap was innocuous. Another case was that of a boy who was operated upon for costo-pericardial and visceral adhesions. He lived for three months and was apparently relieved by the operation; but he then had pericarditis and died. Another child, the subject of cardiac infantilism, had an adherent heart; it got over the operation and seemed comfortable, but went back to bed and died with a clot in the pulmonary artery. Probably the principle was right, however.

Dr. C. W. CHAPMAN, Dr. F. W. PRICE, and Dr. W. BEZLY THORNE also took part in the discussion.

Dr. CAUTLEY, in reply, said that in regard to the remarks he made in the paper as to the infrequency of heart disease of a functional nature in children, the views taken by Dr. Mackenzie and Sir James Goodhart in opposition to his own seemed to be based upon heart affections not exactly in children, but in adolescents. In his experience functional heart disease—not mere irregularities due to alterations in respiration—was distinctly uncommon. Many of the cases of so-called functional heart disease in children had a myocardial origin and some infective disorder, and must be treated by means of prolonged rest. He did not mean that irregularities of the heart were not met with in children, or functional murmurs. Sir James Goodhart's remarks seemed to imply—though he knew he did not hold such views—that faintness was a sign of heart disease. It was not that, nor even a sign of heart disorder, but a vasomotor phenomenon, depending more on the nervous system than on the heart. No one with any real knowledge of medicine would say that a girl because she fainted had organic heart disease, as he believed was sometimes done.

## Philadelphia Pediatric Society.

JOINT MEETING WITH THE NEW ENGLAND PEDIATRIC SOCIETY, THE SECTION ON PEDIATRICS OF THE NEW YORK ACADEMY OF MEDICINE AND THE NEW JERSEY PEDIATRIC SOCIETY, November the 12th, 1912.  
THEODORE LE BOUTILLIER, M.D., President.

**The Treatment of Hæmorrhagic Disease of the Newborn.**—Dr. BETH VINCENT (Boston, Mass.) discussed the recent progress which had been made in the treatment of hæmorrhagic disease of the newborn by the application of sero-therapy in the form of blood transfusion and the injection of animal serum, human serum and whole human blood.

Former methods of treatment were futile with the exception of gelatin. Success with this agent had been reported by some German writers.

The value of animal serum was not conclusively proved by reported cases. After reviewing the experience of others with human blood-serum, Dr. Vincent described his own method of transfusion with coated glass tubes and the use of the external jugular vein in infants.

In a summary of the value of serum treatment he said that human blood and its derivatives were more effective than animal serum. A combination of methods of injection and transfusion was the most rational way of applying this treatment. The injection of human serum or whole human blood was indicated at first sign of bleeding and in cases which took a favourable course. Transfusion was the most effective and safest measure in cases with persistent hæmorrhage and in cases exsanguinated by profuse bleeding.

**Pyloric Obstruction, with a Comparative Study in the Normal Stomach of Infants.**—Dr. GODFREY R. PISEK and L. T. LEWALD (Radiologist, New York City), said that by the use of Röntgen rays and bismuth one could determine, by the degree of positiveness, whether a given case should or should not be operated upon. Modern apparatus, with the intensifying sheets securing instantaneous exposures, made this study possible.

The paper was illustrated with numerous lantern-slides, showing the stomach and alimentary tract of infants with pyloric obstruction, taken at short intervals, the series in each case being completed at the end of approximately twenty-four hours. Comparative studies were made in a similar manner, using normal infants, breast and artificially fed. It was soon evident that the accepted conception of the shape and activity of the infant stomach needed revision. Heretofore these facts have been obtained mainly at the autopsy table and from the embryologist.

The study showed that the normal stomach began to empty itself within a minute or two after the intake of food, and this fact was used to differentiate cases of pyloric obstruction in which the food, in cases of true stenosis, escaped very slowly and through an extremely narrow lumen, while in cases of pyloro-spasm it took twenty minutes to half an hour before the bismuth food passed into the duodenum.

As a result of their findings the speakers prophesied that, in the future,

every suspected case of pyloric obstruction would be subjected to a radiographic study before a plan of treatment was determined upon, just as to-day no surgeon would think of putting up a fracture without the use of the rays.

**An Objective Method of Teaching Food Values and Food Requirements.**—DR. CLIFFORD B. FARR (Philadelphia).—Dr. Farr, in teaching the principles of dietetics to medical students, nurses, and more particularly to the general public (Baby Saving Show), makes use of charts, graduated cylinders containing coloured fluids, and permanent specimens of foods preserved in graduated containers. The charts are worded as tersely as possible, covering, for example, the definition of foods and foodstuffs, the principal foodstuffs and their functions, the principle of the conservation of energy as applied to metabolism, the explanation of the use of the calorie as a unit of food (energy) values, the caloric requirements at various ages with special reference to weight and body surface. Cylinders graduated in c.c. (grammes) and containing coloured fluids, with explanatory labels, are used to show the amounts of the chief foodstuffs (protein, fat, carbohydrate, water, and salts) needed at different ages, the composition of special dietaries, and in a somewhat analogous manner the relative cost of important foods from a caloric point of view. The permanent museum consists of one hundred or more graduated bottles and jars, each containing a quantity of the food represented sufficient to produce 100 calories (method of Irving Fisher). These are fully and distinctly labelled and formed into groups as follows: Foods rich in protein, foods rich in fat, foods rich in carbohydrate, foods chiefly valuable for the salts contained, percentage mixtures and preparations used in infant feeding, diet for a child after weaning, various forms and preparations of milk (thirty) of equivalent food value, etc. The demonstration was supplemented by lantern-slides.

**A Method of Scoring the Viability of Infants under the Care of Hospitals and Infants' Welfare Organisations.**—DR. HENRY L. COIT.—Most of the methods employed for recording the results of charitable medical work among infants show only gross numerical facts, such as "improved," "unimproved," "cured," and "died."

These statistics constitute the total record of results of medical supervision over a great variety of cases, and represent a wide range of physical defects and diseases. They do not, however, indicate the influence of philanthropy upon the more important result of medical supervision and treatment, namely, the living prospects of the cases which did not die.

This is the character of the medical statistics recorded at the end of service, whether it be in an infants' hospital, the infants' ward in a general hospital, an institution for foundlings, an orphanage, or through the various social service agencies designed for the welfare of infants.

The results of educational methods are usually recorded in like manner, either in the mortality records or the influence of the philanthropy upon the weight of the infant without a comprehensive record of all factors contributing to the progress toward a normal physical condition.

All hospitals and philanthropic agencies for infants' welfare are supposed to direct their efforts against the causes of sickness, and some reliable method is needed to determine how far the work done influences the reduction of morbidity as well as mortality. Moreover, it is important to follow the work beyond its prophylactic influence, and, if possible, measure the



progress of the individuals benefited toward an improved environment, a normal nutrition, immunity to disease, and a maximum viability.

In this way only can it be learned how the many causative factors of morbidity and mortality are related to one another, or by which method of procedure the best results are to be obtained in our hospital and charity work. At present it is a matter of individual opinion, and many questions cannot be satisfactorily answered.

The percentage plan of scoring has been employed to determine the status of social, scientific, and commercial investigations, but no comprehensive scoring plan has been adopted which would include in its scope all conditions which influence the care, the physical condition, and the living powers of the infant.

The method presented consists of a statistical score card, and is designed for the collection of facts to determine the influence of environment, of management, of nourishment, and of morbidity upon the viability of the infant, and a graphic chart which will show the improvement in viability during a given time through the activities of a hospital, a medical philanthropy or educational work when directed to the betterment of the conditions which influence the life of the infant.

## Abstracts from Current Literature.

### Medicine.

**Blood-cultures during life in infants and young children** (*Am. Journ. Dis. Child.*, 1912, iv, p. 197).—**M. Wollstein** and **E. Morgan** made a hundred blood-cultures in eighty children, aged from ten days to four years, and obtained positive results in twenty-six cases. Blood was taken from the external jugular vein in all but three cases, in two of which the superficial temporal, and in one of which the median basilic was chosen. The pneumococcus was found before the crisis in four out of thirteen cases of lobar pneumonia, all of which recovered. Bacteriæmia was proved in six out of twenty-six cases of broncho-pneumonia, the pneumococcus being found in four, and the streptococcus in two. Both streptococcus cases and one pneumococcus case died. Eight broncho-pneumonia patients without bacteriæmia also died. The highest percentage of positive results was found in empyema—nine out of fourteen, or 64·3 per cent., three of which recovered.

J. D. ROLLESTON.

**The viscosity of the blood in children** (*Paris méd.*, 1911-12, II, p. 133).—**E. Weill** and **C. Gardère** find that the viscosimeter gives as good results as counting the corpuscles, and is a much more rapid procedure. The authors carried out observations on children between 10 and 15 years of age. In the former they studied four cases of acute digestive trouble with dehydration, and found that the viscosity was increased. The administration of the solution of John and Heim (bicarbonate of soda 5 gm., chloride of soda 5 gm., water 1000 gm., 500 gm. in 24 hours) lowered the viscosity in the cases that recovered, but in the fatal cases the viscosity rose rapidly. In athrepsia the viscosity and the number of the red corpuscles were normal. In the other children studied for the purpose of discovering

the influence of the fluidity of the blood on the production of venous murmurs, it was found that the viscosity of the blood was lowered proportionately to the degree of anæmia. The murmurs were the result of the fluidity.

F. R. B. ATKINSON.

**Leucocyte inclusion bodies in scarlet fever** (*'Deut. med. Woch.,'* 1912, xxxviii, p. 2163).—**M. Kretschmer**, after reviewing the literature, including his previous work (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, ix, p. 528), gives the results of his recent investigations. He has now examined 110 scarlet fever cases and about 170 controls. All the scarlet fever cases showed more or less numerous inclusion bodies, except four who were admitted on the eighth, twelfth, and fourteenth days respectively. The bodies usually disappeared between the eighth and tenth days, but in severe cases might persist until the third week. After completely disappearing they would be found again in a relapse. The number of bodies varied, as a rule, with the severity of the attack. Of 170 controls 30 were positive, and were cases of diphtheria, pneumonia, erysipelas, puerperal fever, and other instances of septic infection. Kretschmer regards the bodies as products of cellular reaction to toxic substances.

J. D. ROLLESTON.

**Acute myelocythæmia associated with osteo-sclerosis and other unusual features occurring in an infant** (*'Edin. Med. Journ.,'* 1912, viii, p. 500).—**A. Goodall** describes the case of a female infant aged 10 weeks, showing the following appearances: (a) Petechial spots, (b) excoriations on the buttocks, with constant oozing of blood, (c) enlarged liver and spleen, (d) blood appearances of myelocythæmia, (e) osteo-sclerosis throughout the body. The case was considered to be the nineteenth recorded instance of myelocythæmia in infancy, and the twentieth occurring in an acute form at any age. The association of leucocythæmia with osteo-sclerosis has previously been recorded on only two occasions.

F. R. B. ATKINSON.

**The diazo-reaction in Leishman's anæmia** (*'Gaz. internaz. d. med. chir., etc.,'* 1912, p. 775).—**S. Cannata** investigated eleven cases in children, aged from ten months to three years, and found the reaction positive in seven, and negative in four. Though a positive reaction was more frequent in severe than in mild cases, it might be absent in severe cases, so that no prognostic value could be attached to the reaction.

J. D. ROLLESTON.

**Kala-azar in Spain** (*'La Med. de los niños,'* 1912, xiii, p. 157).—**Vargos** notifies the existence of many cases of infantile splenomegaly due to Leishman's protozoon on the Mediterranean coast, especially in the neighbourhood of Tortosa. A forthcoming number will contain an account of the cases by Pittaluga.

M. D. EDER.

**Henoch's purpura** (*'Jahrb. f. Kinderheilk.,'* 1912, lxxvi, p. 573).—**A. Gana** records two cases. The first was a boy, aged 9 years, in whom the abdominal symptoms, suggestive of chronic intussusception, occurred first, and the purpura did not appear till the third week. Recovery took place without operation. The second was a boy, aged 5 years, who had had attacks of purpura simplex during the last two years. A fortnight before

admission purpura had appeared on the body, and he had bleeding from the mouth. Twelve days later colicky pains, vomiting, constipation, and blood in the urine occurred, and a painful swelling appeared on the right side of the umbilicus. Death took place without operation. Post mortem, intussusceptions were found in the ileum and descending colon.

J. D. ROLLESTON.

**Henoch's purpura treated with human blood-serum** ('*Med. Record*,' 1912, II, p. 249).—**S. J. Wilson** reports a successful instance in a severe case of purpura, in which there was ulcerative tonsillitis, showing as predominating organisms *Streptococcus longus* and *Staphylococcus citreus*. The child, a boy, aged 9 years, was extremely ill, and the case was regarded as hopeless. The child's father was venesected on two occasions to 15 ozs. and 12 ozs., and the serum obtained from this blood injected subcutaneously. Five injections were given in six days.

REGINALD MILLER.

**Hæmophilia; death due to sprain of knee** ('*L'Echo méd. du Nord*,' 1912, xvi, p. 309).—**H. Paucot**.—The first symptoms were manifest at the age of 18 months, when, after a fall, two severe palpebral hæmorrhages appeared. At the age of 2 years there was severe bleeding from the gums, and six weeks later blisters applied for broncho-pneumonia caused hæmaturia. At the age of  $2\frac{1}{2}$  there was severe bleeding from a bruise, and another hæmorrhage from the gums a year later. These gingival hæmorrhages occurred from time to time up to the age of 16 years. After the age of 12 years, after slight injuries, the child began to get swellings of joints, first of the shoulder, then of the knee and other joints. At the age of 25, making a false step, the patient sprained the right knee, which became much swollen, and a painful swelling extended to the thigh and leg. He became very anæmic, with a frequent and very weak pulse. The temperature became subnormal, he showed tendency to syncope, became drowsy and more pallid, and died in a severe attack of coughing. The urine contained abundant mucin, traces of urobilin, very abundant scatol, but no other abnormal ingredient. Further examination of the urine showed diminished alkalinity, a destruction of leucocytes leading to an increase of uric acid and a lessened urea output due to hepatic insufficiency. Microscopically there was no blood and no casts.

J. PORTER PARKINSON.

**Hypodermic use of hæmatinics in anæmia of children** ('*Am. Journ. Dis. Child.*,' 1912, iv, p. 160).—**H. Lowenburg** reports twenty cases of anæmia in children, aged from four weeks to fourteen years, whom he treated by hypodermic injections of the following composition: Ferri cit. gr.  $\frac{3}{10}$  or  $\frac{3}{4}$ , sod. cacodyl. gr.  $\frac{1}{4}$ , sod. glycono-phosph. gr.  $1\frac{1}{2}$ , aq. dest. ℥xx. The gastric disturbance caused by the ingestion of the drugs was thus avoided, and the tonic effect was noted almost immediately after treatment. The average number of injections given to a case was a little over ten. The best and least painful site for injection was found to be the posterior lateral inner aspect of the upper part of the arm.

J. D. ROLLESTON.

**Vacuolisation of the muscular fibres of the heart in infantile atrophy and hypotrophy** ('*Clin. Infant.*,' 1912, x, p. 353).—**G. Variot** and **Caillan** described the appearances seen in transverse and longitudinal sections. The vacuoles are round or oval cavities, with sharp outline, more or less confluent on the line of section. Each forms a shining space in



whose centre the muscular substance seems to have vanished. When, however, the vacuole is recent and small, granular substance may be seen in it. Reagents show that this condition is not associated with fatty degeneration. Longitudinal sections show that generally the vacuole is seated near or around the nucleus, and there seems to be an increase of perinuclear sarcoplasm. Between the nuclei several vacuoles in a longitudinal series are sometimes seen, but these internuclear vacuoles are much less common than the perinuclear. The parts of the myocardium most frequently affected are, in order of frequency, the left ventricular walls, the pillars of both sides, the apex and the left auricle. Three stages are described: In the first stage the lesions are discrete, there is an hypertrophy of certain muscular fibres, 40 to 50  $\mu$ m. There is no atrophy, the muscle nuclei are slightly proliferated and hypertrophied, vacuoles are scarce, but granular collections and pale-coloured patches in the thickness of the fibres may be observed. The perinuclear sarcoplasm is hypertrophied. The heart is large. This type is found in infants in whom hypotrophy is little marked. In the second stage the lesion is in full evolution, hypertrophied fibres are no longer found, the perinuclear sarcoplasm is increased, and atrophy marked, certain fibres having a moniliform appearance. The nuclei are proliferated and distorted, the vacuoles numerous and marked and heart enlarged. This type was met with especially in a case of tuberculous hypotrophy, and corresponded to that met with in cases of marked hypotrophy with arrest in height and weight due to gastro-intestinal trouble. In the third stage there is generalised vacuolation and atrophy of the fibres; it is met with in a marked degree in cases of Parrot's athrepsia. Seventy-two cases were observed by the authors; the ages ranged from a few days to three years; the majority were between three and seven months. The activity of the process was increased by infection, but in a manner which varied with the nature of the agent. In diphtheria, for instance, there was extreme vacuolisation with great degeneration of the fibres, which were granular and swollen but had little tendency to atrophy. In tuberculous hypotrophy atrophy was marked, and in congenital syphilis both vacuolisation and atrophy were manifest. As to the probable mechanism of the process of vacuolisation it is plausible to suppose that the myocardium, which is in a continual state of intermittent contraction, not being able to renovate itself to meet its physiological requirements, is obliged to fall back on its own reserves.

VINCENT DICKINSON.

**Dextrocardia and congenital diaphragmatic hernia** (*Semana Med.*, 1912, xix, p. 549).—**Beronguer** describes the post-mortem examination of an infant who survived birth for thirty-two hours. The heart, occupied the right pleural cavity; the left contained the stomach, spleen, the small and part of the large intestines. The diaphragm showed a breach of continuity at the angle formed by the vertebral bodies and the aponeurosis of the transversalis abdominis, an instance of the common malformation of a hernia *en croissant* of Duguet. The dextrocardia was embryonic in origin; it had undergone development in the right pleural cavity. M. D. EDER.

**Congestion of the lungs with patent ductus Botalli** (*Monatsschr. f. Kinderheilk.*, 1912, ix, p. 224).—**A. Hayashi** describes two cases of this condition. In the first case, a boy, aged 6 days, post-mortem examination revealed congenital atresia of the aorta between the left carotid and subclavian arteries, with hypertrophy of the right ventricle. In the

second case, a girl, aged 10½ months, the ductus Botelli was patent, and there were marked dilatation and hypertrophy of the whole heart. The lungs in both cases showed congestive changes.

F. R. B. ATKINSON.

**Acute endocarditis in typhoid fever** ('*Rev. de méd.*,' 1912, xxxii, p. 736).—**P. Savy** and **G. Gardère**.—A boy, aged 14 years, who had had acute rheumatism complicated by mitral incompetence four years previously, developed embolism of the right brachial artery in the fourth week of typhoid fever, and died the following day. There was no bed-sore nor any other cutaneous infection. Post mortem, in addition to typical intestinal lesions, recent vegetations were found grafted on the old lesions of the mitral valve. Recent infarcts were present in the spleen and liver. No bacteriological examination was made. Endocarditis is rare in typhoid fever. A large number of the recorded cases must be rejected. It is usually due to a secondary infection, especially a bed-sore, and very rarely to the typhoid bacillus (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1910, vii, p. 85).

J. D. ROLLESTON.

**Bradycardia from partial heart-block in diphtheria** ('*Zentralbl. f. Kinderheilk.*,' 1912, xvii, p. 309).—**Sperk** and **Hecht**.—A child, aged 3 years, on the third day of laryngeal diphtheria had a pulse of 70, which soon sank to 50, and then ranged between 50 and 60. The cardiac dulness was increased. An electro-cardiogram showed that only every second auricular systole was transmitted to the ventricle. In the venous curve also two auricular waves could be seen for one ventricular wave. After injection of 1 mgrm. atropine, the number of auricular systoles rose to 160, and of the ventricular systoles to 80. The lesion caused by the diphtheria toxin must, therefore, have been in the conducting bundle. In such cases atropine is suitable, and digitalis is contra-indicated.

J. D. ROLLESTON.

**A typical case of permanent slow pulse in a girl, aged 11 years** ('*Arch. de méd. des enf.*,' 1912, xv, p. 694).—**B. H. Echenique** narrates a case of Stokes-Adams' disease in a girl of a family of eight children, with no preceding history to account for the condition. The disease had lasted for twenty-six months, and the child was still living at the time of publication. The pulse was regular and amounted to 33 pulsations per minute.

F. R. B. ATKINSON.

**Arrhythmia in healthy children** ('*Arch. f. Kinderheilk.*,' 1912, lviii, p. 30).—**R. Friberger** examined 321 school-children, aged from 5–14 years, with the following results: Not a single one had a completely regular pulse. In 37·4 per cent. the pulse was fairly regular, in 12·2 per cent. it was markedly irregular, and in 50·4 per cent. moderately irregular. Arrhythmia in healthy children is of the "youthful type of irregularity" described by Mackenzie. It was somewhat more frequent in girls (69·8 per cent.) than in boys (59 per cent.). The frequency of moderate and marked arrhythmia fell from the fifth to the twelfth year, while in the thirteenth, and still more in the fourteenth, it increased. Neither size, weight nor muscular development had any influence on the frequency of arrhythmia. Thirty-eight children showed signs of an unstable nervous system and 118 had had scarlet fever or diphtheria or both diseases, but in neither group was arrhythmia markedly frequent.

J. D. ROLLESTON.

**Pseudo-cardiac and cardiac murmurs in children of no pathological importance** (*Jahrb. f. Kinderheilk.*, 1912, LXXVI, p. 247).—**W. Schlieps** examined 273 children suffering from various slight ailments which had no connection with the heart and found a systolic murmur in 100. Three-fifths (63) of these showed a cardio-pulmonary murmur. He agrees with Potain that the anorganic murmurs arise in the lungs for the following reasons: (1) Their maximum intensity is to be found in the border of the lungs. (2) Experiments on animals have shown that murmurs are frequently present in dogs, who on section showed no organic changes in the heart. (3) The murmurs frequently change into respiratory murmurs and *vice-versâ*, according to the influence of the heart or breathing. The author does not believe that anæmia has anything to do with the cardiac murmurs in childhood. A third of the murmurs is due to a lowering of the tonus of the cardiac muscle, and he calls them "atonic" murmurs. They disappear when the general condition of the child is improved. F. R. B. ATKINSON.

**Chronic aortitis and atheroma in children** (*Arch. d. mal. d. cœur, d. vaiss. et d. sang.*, 1912, v, p. 625).—**A. Lévy-Franckel** has collected thirty-five cases, of which nine are personal, of acute or chronic aortitis and atheroma in children aged from birth to seventeen years. Of his own cases five were examples of acute or subacute aortitis and four of atheroma. In the thirty-five cases congenital syphilis figured most frequently as an antecedent, and then in order of frequency articular rheumatism and chorea. The rôle of other affections, apart from chronic scarlatinal and specific nephritis, is questionable. J. D. ROLLESTON.

**Cardiac sequelæ of tonsillar infection** (*New York State Journ. of Med.*, 1912, XII, p. 473).—**J. R. Wiseman**.—Every case of tonsillitis should be regarded as a serious disease, and treated by rest in bed. Every case should be carefully examined before discharge for cardiac or renal trouble. Cardiac complications are more common than are supposed after throat affections. The author narrates four cases in children of four, seven, six and seven years respectively, in whom mitral disease followed an ordinary tonsillitis. F. R. B. ATKINSON.

**The diagnosis and treatment of early cardiac complications of rheumatism** (*Brit. Med. Journ.*, 1912, II, p. 929).—**D. B. Lees** points out that "acute and subacute rheumatism" is a bacterial infection, most common and most virulent in childhood, less common and usually less virulent in adolescents and in young adults. There is but one symptom which is present in every case of the disease. Arthritis, nodules, endocarditis, pericarditis, pleurisy, tonsillitis, erythema, chorea, and all other rheumatic symptoms may be present or absent, but dilatation of the left ventricle is invariably present. This dilatation is caused by toxæmia or myocarditis, or both combined, and it is a very early symptom. The dilatation can easily be detected by careful percussion, rightly performed. It is quite easy to determine accurately the sloping line of dulness of the edge of the left ventricle in the fourth and fifth left interspaces, and that of the right auricle in the fourth right interspace. The first essential for the successful treatment of the cardiac implication of rheumatism is prolonged rest, and in the case of the child this means rest in bed. The second essential is an adequate anti-rheumatic medication. Sodium salicylate in large and gradually increasing doses, combined with sodium bicarbonate in



the proportion of one of the former to two of the latter, should be given. During this treatment it is important (1) to prevent constipation, (2) to keep the urine slightly alkaline, (3) to stop the medicine when symptoms of salicylism supervene, but to resume the salicylate after a few hours in a dose of one half the size of the dose last given, and soon to increase the amount as far as possible. When the dilatation (with or without endocarditis) is great, and especially when pericarditis is present, the medicine should be freely given and an ice-bag should be kept permanently over the præcordial region, with due precautions against general chill. Careful nursing is essential. The application of leeches is often beneficial.

J. ALLAN.

**The relation of chorea to rheumatism: an analysis of 300 cases** (*'Practitioner,'* 1912, LXXXVIII, p. 461).—**M. S. Fraser's** findings are as follows: (1) Out of the 300 cases investigated, 56 per cent. showed during an attack, or before it, evidences of rheumatism. (2) Seventy-two per cent. had a personal or strong family history of rheumatism. (3) Chorea and rheumatism are rare under five years of age. (4) A neuropathic tendency is a very important factor as an exciting cause of chorea. (5) The majority of cases of chorea are closely associated with rheumatism. Probably chorea is a cerebral manifestation of rheumatism. Possibly all cases of true chorea are rheumatic in origin.

F. R. B. ATKINSON.

**Chorea and its treatment** (*'Dublin Journ. Med Sci.,'* 1911, II, p. 336).—**S. F. A. Charles** believes that chorea is due to an intoxication of the system. While he admits the constant association of chorea and rheumatism, he dissents from the view held by many that chorea is a rheumatic manifestation due to a general infection of the whole system with the toxins of rheumatism. He is inclined to think that the toxins in each case are different, but that a rheumatic diathesis is conducive to an attack of chorea. After discussing the symptomatology he examines the indications for treatment. In the first place, treat the diseased neuron by rest, restrain your patient in bed, and, if thought necessary to exclude all superfluous sensory stimuli, isolate the individual. Secondly, control the movements with the free use of trional, thereby producing both mental and physical rest. Thirdly, improve the general health with tonics and a good nutritious diet, from which tea and coffee are excluded. To be of service it is necessary that the trional should be given in large doses.

J. ALLAN.

**Nodular rheumatism in children** (*'Arch. f. Kinderheilk.,'* 1912, LIX, p. 1).—**Rosa Berkowitz**, as a result of the examination of the histories of seventy-eight cases from the literature and five personal cases, came to the following conclusions: (1) The various changes which are found in the structure of the nodules are closely related to each other, notwithstanding their polymorphous appearance. (2) The change of the connective tissue is the origin of every further modification. (3) The different structure of the nodules shows various stages of progressive and then retrogressive metamorphosis of the connective-tissue proliferation, commencing with reactive increase of cells and ending in hyaline or necrotic degeneration, the latter being a process of absorption of the nodules. (4) Nodular formation is only found in severe forms of articular rheumatism in children (97 per cent.). (5) Rheumatic nodules occur in children at the age of puberty who have passed through an acute rheumatic infection without being completely cured.

(6) It is necessary for the appearance of the nodules that the child should still be under the influence of the excitant or poison of the rheumatic infection, which shows itself by relapses of the joint trouble, or other rheumatic manifestations as chorea, endo- or pericarditis. (7) The particular properties of the infective excitant must be considered as well as its increased virulence in the production of nodular rheumatism.

F. R. B. ATKINSON.

**A case of Still's disease** (*Amer. Practitioner*, 1912, XLVI, p. 553).—**J. Collins** records a case in a boy, aged 12 years, of Hungarian Jewish parents. The disease started a few weeks after pneumonia at the age of 4 years. All the joints of the extremities were enlarged and deformed, the spine was rigid in the cervical and dorsal regions, the spleen and liver were enlarged and there was general adenoplasia. The skin was dry and scaly and there was disseminated alopecia. Intelligence good. Blood-examination: Red cells, 3,982,000; white cells, 24,200. Differential count: Neutrophils, 70 per cent.; eosinophiles, 3 per cent.; basophiles, 0; large lymphocytes, 10 per cent.; small lymphocytes, 16 per cent.; transitional, 1; hæmoglobin, 50 per cent. The red cells showed marked microcytosis and hæmoglobin degeneration. Wassermann negative. The urine showed albumin in varying amounts, with many hyaline and a few granular casts.

J. D. ROLLESTON.

**A case of Still's disease** (*Jahrb. f. Kinderheilk.*, 1912, LXXVI, p. 707).—**H. Koeppe** records a fatal case in a boy in whom polyarthritis developed a fortnight after measles at the age of two years and was followed by enlargement of the spleen and lymph-glands. The pallor, emaciation, fever and signs in the lungs at first suggested tuberculosis, but von Pirquet's reaction was negative and a correct diagnosis was made during life. Death took place at the age of three years and ten months. The necropsy showed total obliteration of the pericardial cavity, pneumonia of the whole of the left lung with abscess formation, moderate splenic enlargement, parenchymatous degeneration of the kidneys, cloudy swelling of the liver, swelling of the mesenteric lymph-glands, slight follicular enteritis, and multiple polyarthritis. This is about the twenty-second case of Still's disease on record, and the second published in Germany, the first German case having been reported by Stock in 1904 in his Kiel thesis. Reference is made to the cases reported in this JOURNAL by Parkes Weber (1905, II, p. 208), Newlin (1909, VI, p. 316), and Barclay Ness (1910, VII, p. 199).

J. D. ROLLESTON.

**A case of Still's disease** (*Med. Record*, 1912, II, p. 93).—**V. P. Gibney** reports a case of multiple arthritis in a small boy, which started with a relapsing pneumonia of many weeks' duration. It was noted that on each occasion that the pneumonic process underwent resolution the arthritic symptoms became temporarily worse. Enlargement of the spleen and glands was present, and the joints showed much peri-arthritis without bone changes.

REGINALD MILLER.

**Joint complications of measles** (*Gaz. des Hôp.*, 1912, LXXXV, p. 1905).—**Crémieu** and **Lacassagne** state that arthritis after measles is very rare, but more frequent in adults than children. It may be a simple passing arthralgia or a purulent arthritis necessitating arthrotomy. It is generally confined to one joint and appears during the convalescence; effusion appears,

and then may either disappear or go on to formation of pus with all the signs of a very acute arthritis. Sometimes it assumes the form of a tubercular arthritis. In the other forms the streptococcus in pure culture has been found, and so they are due to a secondary infection, for which measles has prepared the soil. Two cases are quoted, in both of which the knee-joints were the site of the arthritis. Both were of the type of a hydrarthrosis, lasting in one case a month and in the other twenty-eight months. In the latter case the swelling raised greatly from time to time, but the joint was left apparently normal.

J. PORTER PARKINSON.

### School Hygiene.

**On sleep** (*School Hygiene*, 1912, III, p. 109).—**Clive Riviere** explains the physiology of sleep by (1) cerebral anæmia as evidenced by the ophthalmoscope, by the increase in volume of the extremities, and by diminished blood-pressure; (2) loss of irritability of sensory and association fibres in the cortex; (3) voluntary avoidance of stimuli exciting the vaso-constrictor centres. Duval's theory of the retraction of the dendrites of the brain cells is also referred to. Sleep is deepest at the end of the first hour and up to the fifth hour. As sleep becomes shallower, ideas, unrestrained by will, rise into consciousness and give rise to dreaming. Eight hours are required for adults and more for growing boys. In the English public schools the time allowed is far too short: nine hours in summer and nine and a half in winter should be enforced, the extra half hour in winter being required by the greater loss of heat and more active exercise. Ravenhill, studying elementary school-children, found that "entrants and leavers" lost an amount of sleep equivalent to one night in every four, and those at intermediate ages one night in every five. Attendance at markets, choir practices, bands of hope furnish the explanation. The quality of the sleep of the poor suffers by bad ventilation, vermin, and noises. The immediate results are loss of mental and physical vigour, mental irritability, and depression. Illustrations of scholars' handwriting on full and short hours of sleep are given, and the loss of judgment, memory and muscular co-ordination is well shown under the latter conditions. Fainting attacks of a type liable to be mistaken for minor epilepsy are attributed by Dukes to lack of sleep. For the boarding school the author recommends no rising till 7.30, and no work before breakfast. For the elementary school child two hours of sleep should be placed in the daily curriculum.

CHRISTOPHER ROLLESTON.

**Handicraft for school-girls** (*Journ. of State Med.*, 1912, xx, p. 418).—**Miss E. P. Hughes** points out that all the arguments which can be brought forward in favour of the teaching of handicrafts to boys can be applied with intensified force to girls. She discusses such arguments under the headings physiological, psychological, educational, economic and social, and she gives details of schemes for handicraft suited to girls at different ages. The results noted are summarised as follows: (1) Much better attendance at school, because the children are so interested and because the parents can understand the value of what they are learning. (2) The children have learnt to love working with their hands, and are also not satisfied unless their work is fairly good. (3) They have learnt to dislike seeing anything in the home unmended. (4) Their ingenuity and capacity



for contriving, adjusting and adapting have greatly developed. (5) The children increasingly believe that if something is wrong (does not act, is falling to pieces, etc.) it should be put right, and they increasingly believe that if they try hard they probably can put it right. (6) It has much increased their interest in their home and in home work, possibly because increased dexterity, skill and knowledge enable them to do this work much more quickly and much better. (7) It has undoubtedly quickened their capacity for acting and thinking, and has developed their intelligence generally. (8) Discipline has ceased to be any difficulty.

J. ALLAN.

**The open-air schools of Cleveland** (*Cleveland Med. Journ.*, 1912, x, p. 717).—J. C. Placak gives a short account of the management of the open-air schools of Cleveland. The result obtained, both in physical improvement and mental alertness, has been very marked. The points to which special attention should be called are the improvement in the general health of these children; the great advance in scholarship as compared with that made by these same children when in the regular schools; and the remarkable freedom of these children from attacks of coryza, tonsillitis, and bronchitis, as compared with those in the regular schools. The author considers that the open-air schools have proved their worth as a valuable aid in the great battle which is being waged against the "white plague."

J. ALLAN.

**The prevention of school epidemics** (*Journ. of State Med.*, 1912, xx, p. 605).—Von Drigalski gives an account of the methods adopted, particular attention being accorded to the question of "carrier" cases.

J. ALLAN.

**The prevention of tuberculosis among school-children** (*Journ. of State Med.*, 1912, xx, p. 625).—Nietner agrees with Schlossmann that tuberculosis is a true children's disease, is acquired during childhood, may be prevented during childhood, and must be treated and cured during childhood. The infection is acquired in the home through association with persons suffering from "open" tuberculosis. The safest way of rendering an infected individual innocuous to his environment is to isolate him. Equally efficacious would be the removal of healthy children from infected houses to healthy surroundings. They could be boarded out, as Grancher suggests, with healthy farmers in the country, or be brought up in juvenile homes, after the Swedish model. But these methods are often impracticable. The danger of the consumptive school teacher is discussed, and it is concluded that it would be wiser to institute measures for preventing consumptive persons from entering the school-teaching profession. To attain this end the following measures are suggested: Inclusion of hygienic instruction, with special reference to the prevention of tuberculosis, in the curriculum of all seminaries for teachers; searching medical examination of all candidates for the seminary; medical supervision over seminary pupils; above all, careful medical examination before appointment to school posts and rigid exclusion of all tuberculous subjects. The entrance of children suffering from open tuberculosis into the school can best be prevented through the universal introduction of an efficient school medical service, and the initial duty of the school medical officer should be the thorough examination of all school entrants. Those children who are

already suffering from manifest tuberculosis are excluded from entering school. Those children who show faulty development must also be provisionally excluded. Those children who are judged to have latent tuberculosis are admitted, but receive special supervision. Educational measures and the hygienic construction of school premises and class-rooms are also discussed.

J. ALLAN.

**The prevention of deafness and the instruction of the deaf child** ('*Med. Record*,' 1912, I, p. 827).—**Hudson Makuen** considers his subject under three heads: (1) To what extent is deafness preventable? (2) How is it preventable? (3) What could be done for children irrevocably and irremediably deaf? He believes 50 per cent. of deafness to be preventable. Congenital deafness can be prevented by strict application of the principles of eugenics, and acquired deafness from measles, scarlet fever and nasal conditions could be prevented if the practitioner would but do his duty. The key to the situation in the matter of prevention of deafness is in the hands of the general practitioner. As regards education, the deaf child must not be classed as mentally defective. Those slightly deaf should be instructed in classes with normal children; those of greater degrees of deafness in special classes. The instruction of the deaf child should begin at home under the direction of an intelligent mother or governess and a physician.

MACLEOD YEARSLEY.

**The causes leading to educational deafness in children, with special reference to prevention** ('*Lancet*,' 1912, II, pp. 138 and 228).—**Macleod Yearsley** has collected statistics relating to 2197 children of both sexes, 1076 of whom he had examined personally in the London County Council schools and elsewhere. Of the 1076 cases, 484, or 44·98 per cent., were cases of congenital deafness, and 592, or 55 per cent., were acquired cases. In 123 families congenital deafness occurred in the direct line or in collateral branches in 56, or 45·5 per cent., and in 309 families consanguinity of parents was present in 22, or 7·08 per cent. Yearsley therefore maintains that the number of deaf-mutes could be considerably diminished by the application of eugenic principles. Among the causes of the acquired cases the infective diseases came first with 214 cases, or 34·4 per cent., of which 156 belonged to the infectious fevers. The cases due to diseases of the nervous system numbered 111, or 18·7 per cent., of which meningitis (exclusive of the tuberculous form and epidemic cerebro-spinal meningitis) formed the greatest bulk—65, or 10·9—of the acquired cases. One hundred and seventy-six cases, or 29·7 per cent., were due to primary ear disease, in which middle-ear suppuration and middle-ear catarrh bulked almost equally. Miscellaneous causes, chiefly injury, accounted for 58, or nearly 9·8 per cent., of the acquired cases. Seventeen cases, or 2·8 per cent., were due to combined causes, 11 cases were of doubtful origin, and in 10 the cause was unknown. The prevention of acquired deafness is then discussed according to these various causes (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1912, IV, p. 390).

J. D. ROLLESTON.

**An experiment in the training of backward children** ('*School Hygiene*,' 1912, III, p. 37).—**Duncan Forbes** divides backward children into (1) ordinary dull, backward children, who make all-round, slow, and steady progress; (2) intermediates, who are weak in one or more subjects, are unable to be taught with younger children, are lacking in concentration, and are quite unable to benefit from abstract teaching. An intermediate

form, called the "practical class," was arranged of twenty-seven boys, whose average age was twelve years and their average ability that of Standard II. To every side of the teaching a practical aspect was imparted: in arithmetic they make out bills and measure objects, in history they make models of the various objects mentioned, and in geography they make clay outlines. The author says that at least half the school-day must be given up to such work as clay-modelling, and work in cardboard, paper, and wood. The subsequent history of thirteen cases who left the school was fairly satisfactory: nine are in regular work, and of these five may be said to be engaged in skilled occupations, while the remaining four are in blind-alley careers of the nature of paper-selling and message-carrying.

CHRISTOPHER ROLLESTON.

**School closure in measles** (*'Lancet,'* 1912, I, p. 294).—A. Banks Raffle favours this as a means of preventing the spread of measles, and he submits statistics of a recent severe epidemic of measles in South Shields in support of his contention. Fifteen out of 21 of the infant schools were closed. There were in this epidemic 4470 children exposed to infection, and of these 2180 were susceptible to measles. Of these 853 were attacked, 638 cases occurring during the time the children were at school, and 140 during a period of fourteen days after the school was closed; that is, 778 cases which might have been infected either at school or in home life. Thus, at the time of the removal of the possibility of the infection at school, there were still more than 1400 children who were susceptible to measles. Only 75 of these children contracted the disease. This shows, in the opinion of the author, the important part played by the school in the spread of the infection of measles, and the value of school closure in this epidemic as a preventive measure.

J. ALLAN.

**Results of re-vaccination in school-children** (*'Clin. Infant,'* 1912, x, p. 563).—Dufestel examined 293 re-vaccinated children on the fourth and the eighth day after vaccination, with the following results: 123 were negative on the first examination and 160 on the second; 33 were doubtful on the first examination, but were either positive or negative on the second, and 137 were positive on the first examination and 133 on the second. He concludes that all children should be examined twice. It appears that the doubtful cases disappear between the fourth and eighth day; these are children whose previous vaccination is still partly efficacious. His results also show that nearly half the children have lost the effects of their first vaccination by school age.

J. PORTER PARKINSON.

**The medical inspection of school-children in the elucidation and prevention of rheumatism** (*'School Hygiene,'* 1912, III, p. 131).—F. J. Poynton deals with the help that may be expected to be obtained from the inspection of school-children in the study of rheumatic questions. He expresses the hope that by this means the sources of infection and the predisposing causes of rheumatism may become more clearly recognisable. He points out some of the problems awaiting elucidation, and gives an account of the stage of invasion and early symptoms of rheumatism in children. Of particular importance is his plea for the establishment of "sanatoria" suitable for the convalescent rheumatic child, where prolonged rest and treatment can be properly carried out in such a way as is now impossible either in the wards of a hospital or in the homes of the poor.

REGINALD MILLER.



**Epidemic poliomyelitis in west Suffolk** (*'School Hygiene,'* 1912, III, p. 94).—**D. A. Carruthers** states that there were forty cases distributed over twelve schools situated in the south-east, west and eastern sections of the county. The children affected with the disease were excluded for five months, the house contacts for six weeks, and children suggesting prodromal symptoms, viz. headache, sore throat, drowsiness and diarrhoea for two weeks. No clear proof is forthcoming that any of these administrative methods were of any use. In one school where a boy actually attended during his illness no further case arose. In another outbreak, connected with three deaths, the school was on its holidays and did not reassemble till after the epidemic had abated, and further, in the village with the largest number of cases, *i. e.* ten, only three were of school age. This is in marked contrast to the Devonshire schools reported by Dr. Adkins.

CHRISTOPHER ROLLESTON.

**School and epidemic paralysis of children** (*'Jahrb. f. Kinderheilk.,'* 1912, LXXVII, p. 143).—**J. Langer** agrees with the view that Heine-Medin's disease is contagious, and draws attention to the following facts in support of the view that school is a source of infection. Sixty cases of the disease occurred in school-children as opposed to thirty-seven in children during holiday time. Twelve times two cases, twice three cases, and once five cases occurred in one class. The inoculation period varied from five to sixty days. In six cases the diseased sat next to each other, and ten times only children of the same sex were affected (seven girls, three boys). The affected children were in daily contact with each other. The children in some of the classes were visited by children not at school, related to diseased brothers and sisters.

F. R. B. ATKINSON.

**Modern methods of cripple care in Germany** (*'Journ. of State Med.,'* 1912, XX, p. 595).—**K. Biesalski** points out that the aim of the cripple institution is to convert the cripple into a healthy wage-earner. In Germany the term "cripple" is held strictly to apply to individuals who exhibit functional disturbances connected with the movements of the body or limbs. But crippled individuals who also suffer, for instance, from tubercular glands, hare-lip, or rachitis in its most glaring form, or who are idiots or epileptics, are, generally speaking, excluded from the benefits of institutional training. All the German institutions are divided into three sections: the clinic, the school, and the workshop. All three work under one roof, and are under one management as an organic whole; this arrangement ensures that time, money, and energy are most profitably employed, and achieves the best possible results. The clinical section contains an operating theatre, medico-mechanical apparatus, Röntgen laboratory, drilling-hall, and orthopædic workshop for the manufacture of iron splints, etc. The teaching in school is largely manual. There is also instruction for backward children by specially trained teachers. Continuation and trade classes are also arranged for the workshop pupils, and these accurately correspond to legislative requirements. Arrangements for "ambulant" cripple treatment have more recently been made, but as yet organisation in this respect is far from being perfect.

J. ALLAN.

**The want of school dentistry** (*'Med. Press and Circ.,'* 1912, I, p. 460).—**G. Sheppard** says that in Ireland there is practically no conservative dental treatment available for the poorer classes. So far only

four school dental clinics had been established in contrast with England, where twenty-nine are already at work. He calculates that 560,000 children in the Irish elementary schools suffer from caries. Dental hygiene is being taught to 430,000 children, but more stress should be laid on dietetic errors, and the use of tooth-brushes, silk and powder should form part of the general school routine. As substitutes frayed pieces of cane, linen thread and precipitated chalk and soap are recommended. With limited funds no carious temporary teeth can be filled. Extraction and the application of silver nitrate is the only possible treatment. It is suggested that if treatment began with the six years old and were continued throughout the school life there would be 140,000 children to be treated and 168,000 permanent carious teeth to be filled annually. The interest of the teachers must be enlisted, and the lessons received by the children must be imparted to the parents, who here, as in other parts of school medical work, are the main obstacles to progress.

CHRISTOPHER ROLLESTON.

**Pollution of swimming-baths** ('*School Hygiene*,' 1912, III, p. 79).—**J. Graham Forbes** found in a bath of 4300 gallons capacity, which was emptied and scrubbed once or twice a week, 100 organisms of the *proteus* group per c.c. After the bath had been in use for two days 4000 organisms per c.c. were counted, consisting of bacteria of (1) the skin, e.g. *Staphylococcus pyogenes aureus*, *S. epidermidis albus*, and members of the *proteus* group; (2) normal saliva; (3) fæces, e.g. *B. coli*, *B. pyocyaneus*, and *Streptococcus faecalis*. *B. coli* was found in as little as 5 c.c. of the bath water. These organisms are of practical importance, for *B. pyocyaneus* and *proteus* may give rise to otitis media and pulmonary abscesses. There must also be considerable danger of infection by the organisms of tubercle, typhoid fever, and diphtheria. The author concludes by advocating the use of a fluid prepared by electrolysis a mixture of magnesium chloride, sodium chloride, and caustic soda. This method was devised and tested by Dr. Alexander, Medical Officer of Health for Poplar, who found that water holding 10,000 organisms per c.c., chiefly *B. coli* and *streptococci*, after treatment with the electrolytic fluid contained only 300 harmless saprophytes per c.c.

CHRISTOPHER ROLLESTON.

## Reviews.

LE NOURRISSON. A bimonthly review. No. 1, January, 1913. Pp. 64. Subscription 12 francs for France, 14 francs for other countries. Paris: Baillière et Fils.

IN welcoming this new journal, which is devoted to the hygiene, pathology, and diseases of the first two years of life, it is only just to pay a tribute to the energy of Professor A. B. Marfan, the editor, who explains the objects and scope of our contemporary in the introduction, and in collaboration with Dr. Baudouin describes a remarkable case of congenital stenosis of the pylorus. For the last eight days of life the infant showed a general tetaniform contracture, which appeared to depend on toxic changes in the pyramidal cells of the cerebral cortex in the Rolandic area. The poison, which was probably manufactured in the stomach as the outcome of stasis

due to pyloric obstruction, gave rise to hæmorrhages and fatty changes in the liver. It is noteworthy that the parents of the infant were Italians, for congenital pyloric stenosis, though comparatively common in England, North America, Germany and Scandinavia, is very rare in France and in the Latin and Slav races. This first number contains another original article of interest—"The Control of the Upbringing of Infants," by Dr. Aviragnet—and a general review on "The Internal Temperature of Newborn and Premature Infants," by Dr. E. Apert. There is also a practical article on "The Treatment of Impetigo by the Local Application of Fuchsin," by Dr. Triboulet. A valuable feature of this review is the large space devoted to abstracts of current literature.

H. D. R.

NATIONAL ASSOCIATION FOR THE STUDY AND EDUCATION OF EXCEPTIONAL CHILDREN. PROCEEDINGS OF THE SECOND ANNUAL CONFERENCE. Plainfield, New Jersey. Pp. 190. Price \$1.50.

THIS association exists to help the handicapped normal child, the unfortunate, the misfit, and the misunderstood.

The introductory address was delivered by Dr. Emil Schmidt, who referred in glowing terms to the work of Dr. Grossmann and to the institution (Herbart Hall) which he directs, where a completely fitted pædagogic laboratory has been established.

Dr. Marcus Neustaedter, in a chapter on ætiological factors, states that parental intemperance exercises a marked influence upon the nutrition, from which results a mental and physical deterioration. Inebriety should be punished by revoking the licence of any resort where this occurs. Marriage should be preceded by medical examination, and divorce should be facilitated. Vasectomy is strongly advocated, and it is stated that in three quarters of the criminals so treated no objection was made, and that recidivism was far less frequent among the operated than among the intact.

The conference considered self-abuse and cigarette smoking at some length during the time set aside for juvenile delinquency, but no very satisfactory agreement as to the importance of these aberrations was reached.

In Dittrich's article on syphilis the retarding influences of this disease on growth and development are well brought out, and a precocious obesity, either general or confined to the lower part of abdomen, is specially referred to as one of the signs of the late hereditary form. As a prophylactic, the compulsory treatment of prostitutes by "606" was advocated for the acutely infectious lesions.

Miss May S. Garrett ably advocated the teaching in early infancy of deaf children by the lip-reading method, thus avoiding the herding together of deaf children and the all too frequent intermarriages of the deaf.

In the section on social work emphasis is laid on the neglect of the Christian churches.

The problem of truant children is solved by sending them to a self-governing colony, that is to say, a school managed on the prefect or monitor system. Any activity, such as music or drawing, congenial to the pupil is encouraged. Great stress is laid on the danger of the blind-alley occupations in the production of truancy.

Dr. Bosworth McCready contributes interesting clinical studies on familial congenital word-blindness, on a case of delayed power of speech production, and of epileptic attacks cured by removal of tonsils and



adenoids. A child unable to pronounce consonants was found to have partial word-deafness, and a boy, aged 17 years, convicted of larceny, was found to be suffering from chronic nephritis.

Mr. Fletcher alludes to the splendid outlook for the cure of stammering children, and to the fact that a considerable amount of this defect is due to imitation. He argues that considerable expense is justified in combating this malady by the help of the psychologist, as the whole trouble is due to an "unconscious complex crowding itself between the syllables and the words."

Prof. J. Putnam concludes the volume with remarks on Freud's method for exceptional children. The child finds himself confronted by a variety of means of obtaining sense gratification, *e. g.* by excitation of mouth, urethra or anus, all of which he is taught to repress. If the teaching fail, the child is liable to be morbidly sensitised, and may thus in after years enjoy the infliction of pain, thieving and other vices. On the other hand, if the attempt to break away from these unfortunate tendencies be too violent, the repressed craving is often pursued under another form.

C. R.

THIRD REPORT OF DEPTFORD SCHOOL CLINIC OR HEALTH CENTRE FOR THE SCHOOL YEAR 1911-1912 London: P. S. King & Son. Pp. 31.

It is a great pleasure to us to record the continued progress and extended scope of Miss McMillan's pioneer work and that of her able medical, dental and nursing staff. The medical report is contributed by Drs. Rosa Ford and Messrs. Eder and Burney. 3744 children received medical, and 2794 dental treatment. There were 509 cases of defective eyesight, which received prescriptions by the method of retinoscopy. Here, as in other clinics, the great majority of the errors of refraction were due to hypermetropia or hypermetropic astigmatism. It is interesting to note that there were 316 cases of conjunctivitis, but unfortunately no information is vouchsafed as to the infecting organism. Ringworm cases are referred to hospitals with X-ray apparatuses when possible; otherwise they are treated with oleate of copper. The duration of treatment by the latter method is not stated. Massage has been successfully employed by Miss Riddell for infantile paralysis and for constipation. As many as 697 operations for enlarged tonsils and adenoids have been performed under ethyl chloride anaesthesia, from which the children recover very rapidly and with apparently no trouble from post-anæsthetic vomiting. On the third day after the operation breathing exercises are begun and are continued for three weeks under Miss Riddell. The causation of these hypertrophies is attributed to rickets. In the infant consultations, dried milk powders provided under the name of "glaxo" are given. The results are said to be satisfactory, but it would surely have been better to have used some modification of cow's milk, *e. g.* citrated milk, which is more likely to be within the mental and financial capacity of the working classes.

The dentist still adheres to the microbe-laden toothbrush, but urges that it should be kept thoroughly clean. Nitrous oxide is the anæsthetic used for extractions rather than ethyl chloride.

The most important part of the work is the night camp. Here delicate and neglected children sleep, are fed, and are taught how to care for their bodies generally. The principle of the costly sanatorium is anticipated at a most favourable age. Miss McMillan has done so splendidly in the

squalid surroundings of Bradford and London that it is to be hoped that the wider field of rural England will soon be opened to her administrative genius. There the immediate surroundings of child life are in many localities as bad as in Deptford, but the ultimate prospects of success far more hopeful.

C. R.

STAFFORDSHIRE COUNTY COUNCIL: ANNUAL REPORT OF THE SCHOOL MEDICAL OFFICER FOR THE YEAR 1911. Pp. 92.

THE report is prefaced by a few remarks by Dr. George Reid, who laments that with advancing progress in medical inspection there is no corresponding improvement in the cleanliness of the scholars. A similar state of affairs is, however, recorded in most county areas, and it is becoming incumbent upon all authorities to appoint special officers to cleanse His Majesty's lieges. The great value of medical inspection as an indicator of filthy and overcrowded homes is emphasised, and to the necessity of sanitary authorities taking a part in this work a forcible allusion is made.

Formerly the work of finding out if defects were remedied was left to the school attendance officers, who were able to report that 90 per cent. of the children had been treated. At present the lady doctors employed by this authority do this work, and report that only 50 per cent. obtain satisfactory treatment, of the eye cases rather more than half have received attention, and considerably less than half of the throat and nose ailments.

The question of ringworm receives considerable attention. A series of fourteen schools were put on the epidemic list, and were visited at four weekly intervals. All cases of ringworm were excluded. At three of the fourteen schools this process was successful, but at one school it failed. Mr. Priestley points out that it is only infection during school hours that can be controlled in this way, and announces that next year ringworm cases will be admitted to the schools under certain conditions. Like the majority of experienced inspectors Mr. Priestley denies that mouth-breathing and caries of the teeth have any connection, and argues correctly that as dirt is far less prevalent than caries, the former cannot be the ætiological factor of the latter. The poorer children have no worse mouths than their more favoured comrades.

Only thirteen cases of pulmonary consumption were discovered among the 19,948 inspected, but no details are given of the cases, or of their progress. Sixty-seven cases of other forms of tuberculosis are catalogued.

The report gives evidence of ungrudging labour faithfully performed.

C. R.

EDUCATION REPORT OF THE MINISTER OF PUBLIC INSTRUCTION, VICTORIA, FOR THE YEAR 1910-11. Melbourne, 1912.

THE Report is based on the examination of 9559 children by one male and two female physicians.

As in England so here the prevention and treatment of dental cases is the outstanding necessity; one school is mentioned where only one child in 500 had clean teeth.

In three schools there were large numbers of children with enlarged thyroid glands and frequent pulses, but unassociated with exophthalmos or nervous symptoms. The ætiology of these hypertrophies is uncertain.

A special report on tuberculosis in teachers is appended, and it is satis-



factory to note that only 11 were found out of a roll of 4500, but 10 of these were in an advanced and presumably infectious stage of the disease. It is gratifying to find that liberal arrangements are being made for their restoration to health—six months on full pay, being followed by six months on half pay.

There is an interesting note on the examination of sixteen aboriginals—nine girls and seven boys. The girls were well developed and above the average in height and weight. Enlarged tonsils, adenoids and dental caries were found in as high proportions as in Great Britain, but pediculosis was less serious than among the elementary school-children of other parts of the Empire. In disposition they are gentle and obliging, and in after years devote themselves to fishing rather than domestic or other forms of slavery.

C. R.

INFANT MORTALITY: THIRD REPORT. By DR. HELEN MACMURCHY. Toronto: 1912.

THIS report begins with a full account of the faulty methods of birth registration in vogue throughout the Dominion. Compulsory notification by the physician is on the Statute Book, but is laxly enforced.

Statistics are then given to illustrate the fearful mortality among Canadian infants, varying from 320 per 1000 in Ontario to 111 in Nova Scotia.

Interesting hints on breast-feeding are forthcoming, and Dr. Eric Pritchard's valuable pioneer work on the test-feed is acknowledged. The best directions ever published on the proper method of cleansing the feeding-bottle and teat are produced in this report, and these are followed by directions for making a cheap form of home-made refrigerator.

The insanitary conditions of the Canadian towns are figured in several excellent photographs, and should certainly be sent to the emigration offices. Enough has been said to show that the report contains several items of great practical interest, but it is somewhat disjointed, and it is at times difficult to comprehend the sequence of the author's statements.

C. R.

ETAT ACTUEL DE LA PÉDIATRIE EN POLOGNE. Par M. MOGILNICKI (Lodz). Varsovie: 1912. Pp. 40.

THIS interesting little pamphlet, which is a reprint from the '*Przegląd Pedyatryczny*,' or '*Polish Journal of Children's Diseases*,' contains a short account of the progress of pædiatrics in Poland, a description of the children's hospitals, crèches, and "gouttes de lait" in Russian, Austrian and German Poland, a list of Polish medical journals, and a bibliography of Polish articles on children's diseases from 1900 to 1912.

J. D. R.

GYMNASTIQUE ORTHOPÉDIQUE. By DR. P. RÉDARD. Paris: A. Maloine. Pp. 220, with 129 illustrations and 2 plates. Price not stated.

THIS is a work upon remedial exercises written by an orthopædic surgeon; it therefore deals with the subject with a breadth of view and a realisation of the limitations of the possibilities of gymnastics that are often lacking in the writings of those who practise only physical therapeutics. Dr. Rédard also is well versed in the various rival schools of gymnastic treatment and committed to none in particular; he selects from all, describing those



methods which he himself finds useful. Thus in the treatment of torticollis he ignores to a large extent the Swedish methods which are based upon rule of thumb, carefully enumerating instead his own methods of stretching the cervical muscles. Under spinal curvatures, on the other hand, the general exercises are based largely upon the Swedish system, with the addition of Klapp's creeping exercises, but the passive corrective movements are methods of his own. The exercises and manipulations are clearly and briefly described in such a way as would enable the reader to carry them out himself. And although naturally exception may be taken to many of the views expressed in a work which is largely personal, the methods and views of a surgeon of Dr. R  dard's experience are bound to be of great use to others.

The illustrations, chiefly taken from photographs, are good in almost every case, showing the requisite points.

Incidentally Dr. R  dard's belief in gymnastic methods is well illustrated by his statement that torticollis after operation should be treated solely by exercises and manipulations, and that apparatus should be given up. This view, although expressed by him in his work upon torticollis, published in 1898, and practised by a few surgeons in England, has not yet obtained general recognition in this country.

R. C. E.

MOTHER AND BABY: OUTLINES FOR A YOUNG MOTHER ON THE CARE OF HERSELF AND HER BABY. By SELINA F. FOX, M.D., B.S., Senior Physician of the Bermondsey Medical Mission for Women and Children, late House-surgeon of the Clapham Maternity Hospital, etc. London: J. & A. Churchill, 1912. Price 1s. 6d. net.

WE have pleasure in welcoming this little book, the aim of which is well indicated by the sub-title. The teaching throughout is sound and practical, and the writer of the book has acquired the art of placing the subject before her readers in simple, unambiguous language. After the two opening chapters, in which are considered the preparation of the mother and preparations for the baby, she deals with the hygienic management of infancy and concludes by discussing baby's troubles and first-aid in the nursery and the treatment of emergencies. The remarks on infant feeding are most sensible. The book is evidently intended for the well-to-do, because many of the recommendations are inapplicable to cases where "necessity is the mother of invention." We think it would have been better not to have inserted the prescriptions on pages 180 and 181, but apart from that we do not think anything has been included to which exception might be taken. We feel sure the book will meet with the success it well deserves.

J. A.